AN 25 1961

VOLUME 45 • NUMBER 261 January 1961

B 880894

THE LIBRARY OF CONGRESS SERIAL RECORD

FEB 14 1961

THE Bulletin

OF THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS

Seeking Improved Learning Opportunities

Fourth Report on Staff Utilization Studies

SERVICE ORGAN FOR AMERICAN SECONDARY SCHOOLS

THE CONTENTS OF THIS BULLETIN ARE LISTED IN "EDUCATION INDEX"

Second-class postage paid at Washington, D.C., and at additional mailing offices.

FOR PEACE OF MIND DURING STUDENT AND FACULTY TRIPS . . . . . .

professionally developed under guidance of educators and medical authorities

provides more benefits than other known student travel insurance plans

NSTIS is privileged to be the nation's leading specialist in the field of educational group travel insurance—serving secondary schools in 42 states and the District of Columbia during all types of trips to places throughout the world. Our exclusive plans are available to schools and educational travel groups completely without obligation. Premiums are paid only for individually insured trips. There is no requirement to ever insure a trip.

COVERS:

all physician, surgeon, hospital and nurse expenses resulting from any SICKNESS or ACCIDENT up to . . . . . $2,600 per person
(up to $3,900 for some sicknesses)

all ADDITIONAL TRAVEL EXPENSES resulting from sickness or accident up to . . . . . $ 125 per person

or in event of: accidental loss of life . . . . . $2,600 per person
accidental loss of sight or limbs . . . . from $1,300 to $2,600 per person

COST: 24 hour trip . . . . 50c per person
1 week trip . . . . . $1 per person
2 week trip . . . . $1.50 per person
rates available for other periods of travel

(NSTIS plans exclude: speed contests, war, suicide, gas inhalation and losses sustained as result of, or while engaged in, an athletic contest. Athletic groups can be covered before and after contests, however. All other groups covered for entire trip.)

Helpful information from the Medical Society of the District of Columbia available to groups visiting Washington, D. C.

NATIONAL STUDENT TOUR INSURANCE SERVICE

416 Tower Building · Washington 5, D. C.

Member—National Association of Secondary-School Principals

For additional information, please complete and mail blank form found on page 351 in this issue of the BULLETIN

JAN 25 1961

Standard Teaching Microscope
MODEL ST

Designed for Better Teaching Results at The Lowest Cost

No. 7968

- 10X Locked-in Eyepiece
- Full Standard Size and Attractively Finished
- Built-on Prefocusing Gauge Reduces Slide Damage
- Stainless Steel Focusing Slide
- High-resolution Parfocal Flat-field Objectives
- Large Stage
- Wide-range Fine Adjustment At a Comfortable, Low Position
- Bumper Toes to Protect Objectives

The Standard ST microscopes are ideal models for general science, biology and other high school science courses. All models have 10X and 43X objectives, giving magnifications of 100X and 430X a range from seeing features of insect structure to that of defining larger bacteria such as Bacillus subtillis. The 43X objective has the large numerical aperture of 0.55, which produces images which are sharp, bright, and show much detail. Objectives are color-coded for quick identification and coordinated class work. A revolving disk diaphragm attached to the underside of the stage provides light control by four graduated stops.

WRITE FOR COMPLETE LITERATURE ON ALL MODELS OF THE STANDARD (ST) MICROSCOPE

THE WELCH SCIENTIFIC COMPANY

Established 1880

1515 Sedgwick Street Dept. G-1 Chicago 10, Ill., U.S.A.

Manufacturers of Scientific Instruments and Laboratory Apparatus

NOTICE OF PROPOSED CHANGE IN THE NASSP CONSTITUTION

BY ACTION of the Executive Committee on September 23, 1960, the following amendments to the NASSP Constitution are recommended. They will be voted on by the membership at the Business Meeting of the 45th Annual Convention of the NASSP, Tuesday morning, February 14, 1961, at Detroit, Michigan.

ARTICLE III—Membership

SECTION 2. All individuals shall be eligible to active membership who are engaged in (a) secondary-school administration and/or supervision; (b) teaching secondary education upon payment of the annual fee of $15.00 to the executive secretary.

SECTION 3. Members of state organizations of secondary-school principals shall be eligible to active membership in the National Association of Secondary-School Principals by the payment of the annual fee of $10.00 through the state secretary or representative.

SECTION 4. All other persons interested in secondary education shall be eligible to associate membership upon payment of the annual fee of $15.00 to the executive secretary.

SECTION 5. Institutional membership shall be open to all secondary schools and libraries and other educational institutions. The annual dues of $25.00 shall be paid by the educational institution. If institutional membership is obtained through a state secondary-school principals' association, it shall be $20.00 per year. The principal . . . . Association.

Current NASSP dues do not support the professional program of your National Association. Only by income from other sources has the Association been able to keep going. At the present time, the NASSP dues just about pay the publication costs of the NASSP BULLETIN alone.

Now that the Association has begun a series of professional projects whose main purpose is to help improve secondary education so that youth may get better schooling, we need an increase in dues. We have not had an increase in dues for eight years and, in that period, total expenses of NASSP have increased 90 per cent.

In the years ahead membership in NASSP is going to be more necessary than ever. The NASSP BULLETIN and our other current publications will reflect a policy of larger commitment to leadership in curriculum, personnel, and services. In addition, a new publication will be developed to keep all of us up to date on NASSP committee proposals and actions, special professional projects, membership news, and a clear, forthright statement of NASSP finances.

But this is not all. Additional regional and drive-in conferences will be held. Much closer relations between your state and national associations will be achieved.

The future is bright with possibilities and potentialities if we have the courage and wisdom to concentrate on addressing ourselves to the big, pressing issues in secondary education with all the vigor at our command.

Volume 45 • Number 261
January 1961

The Bulletin
OF THE NATIONAL ASSOCIATION OF
Secondary-School Principals

This Association does not endorse, except by official action of the NASSP Executive Committee, any individual, group, or organization or the opinions, ideas, proposals, or judgments expressed at the annual convention of the Association, and/or published in THE BULLETIN.

TABLE OF CONTENTS

		Page
Foreword		6
	PART I	
Chapter	GOALS AND PROPOSALS	
I.	The NASSP Project To Study Ways of Improving Staff Utilization — Ellsworth Tompkins	9
II.	New Directions to Quality Education in Secondary Schools — L. S. Michael	11
III.	Some Questions and Answers About Suggestions for Improving Staff Utilization — J. L. Trump	19
IV.	Professional Responsibilities — Wanda Mitchell	29
	PART II	
	STUDIES COMPLETED IN 1960	
V.	Arlington Heights, Illinois, Studies Curriculum and Testing, Instruction Assistants, Team Teaching, and Modern Technology in Fourteen Projects — H. L. Slichenmyer	41
VI.	Glenbrook High School, Northbrook, Illinois, Projects on Internship, Large Classes, Team Teaching, Teacher Aides, and Language Laboratory — N. E. Watson	51

(Continued on next page)

THE CONTENTS OF THIS BULLETIN ARE LISTED IN "EDUCATION INDEX"

Issued Monthly, September to May Inclusive

Copyright 1961 by
THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS

ELLSWORTH TOMPKINS, Executive Secretary
WALTER E. HESS, Associate Secretary and Editor — RUTH B. MAUL, Assistant Editor
J. LLOYD TRUMP, Associate Secretary
G. EDWARD DAMON, Assistant Secretary for Business
COLBURN E. HOOTON, Assistant Secretary for Student Services
GERALD M. VAN POOL, Assistant Secretary for Student Activities
KAY TAMESA, Administrative Assistant

1201 Sixteenth Street, N.W., Washington 6, D. C.

L13
N27

Chapter			Page
VII.	Jefferson County, Colorado, Completes Three-Year Study of Staffing, Changing Class Size, Programming, and Scheduling	R. H. Johnson M. D. Lobb	57
VIII.	J. Sterling Morton High School and Junior College, Cicero, Illinois, Uses Tapes, Language Laboratories, and Team Teaching	W. L. Cooper	79
IX.	Lakeview Junior-Senior High School, Decatur, Illinois, Faculty Studies and Develops a Variety of Staff Utilization Projects	D. W. Beggs	85
X.	Mattoon, Illinois, High School Tries Team Teaching and Science Orientation	H. A. Clawson	93
XI.	Newton High School, Newtonville, Massachusetts, Completes Four Years of Large-Group Instruction	Henry Bissex	101
XII.	Pope County Community Unit High School, Golconda, Illinois, Program Enrichment Through the Use of Material Aids	J. H. Hobbs	115
XIII.	Saint Paul, Minnesota, Teacher Recruitment Project Accounts for the Third Year of College and School Experiences	K. R. Doane W. J. Scanlan	119
XIV.	San Diego, California, Conducts Two-Year Experiment with Team Teaching	L. L. Bloomenshine T. M. Brown	147
XV.	South Bend, Indiana, Develops Educational Broadcasts of Group Guidance	K. W. Reber	167
XVI.	Taylorville, Illinois, Senior High School Uses Tape Recorders, Team Teaching, and Large-Group Instruction To Improve Staff Utilization	C. L. Dillon	179
XVII.	University of Chicago Laboratory School, Chicago, Illinois, Evaluates Team Teaching	Robert Hanvey M. S. Tenenberg	189
XVIII.	University of Illinois High School, Urbana, Illinois, Experiments Further with Independent Study	D. M. Jackson W. L. Shoemaker Paul Westmeyer	199
XIX.	Urbana, Illinois, Senior High School Changes Staff Patterns and Provides for Superior Students	R. H. Braun	209
XX.	Utah Schools Conduct Variety of Studies Under State-wide Organization	M. F. Noall	217

(Continued on next page)

Part III
STUDIES COMPLETED IN PREVIOUS YEARS

Chapter			Page
XXI.	Beecher, Illinois, Small School Study	J. H. French	241
XXII.	Evanston, Illinois, Township High School Reports on Five Years of Projects, Including Television, Team Teaching, and Large and Small Group Instruction	B. S. Pannwitt	245
XXIII.	Fairfield, Illinois, High School Develops Independent Study Skills in American History	M. S. Thacker H. C. Largent	249
XXIV.	Richwood, West Virginia, Initiated Use of Bus Drivers as Teacher Assistants in Driver Education	C. A. Brock	255
XXV.	Roseville, Minnesota's Alexander Ramsey High School's Experimental Project in Science Becomes a Part of the Regular Program	Curtis Johnson	257
XXVI.	Snyder, Texas, Continues Team Teaching	T. E. McCollum C. D. Henry W. O. Nesbitt	261
XXVII.	Westside High School, Omaha, Nebraska, Continues Teaching Spanish and Spelling Partly by Tape	Mrs. R. E. Gibson	267

Part IV
LOOKING AHEAD

XXVIII.	A New High School Organizes for Quality Instruction	M. P. Heller E. R. Howard	273
XXIX.	Brief History and Recommendations of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School	J. L. Trump	275
XXX.	The NASSP Continues Its Services to Schools Interested in Improving Staff Utilization	J. L. Trump	283
	The Book Column		287
	News Notes		337

FOREWORD

THE basic purpose of the NASSP staff utilization studies has been to improve learning opportunities for students—hence, the title of this BULLETIN. Members of the NASSP Commission who directed these studies are listed on the page opposite the "Table of Contents."

The Commission early in its existence in 1956 adopted some basic assumptions which included the following:

The quality of education depends largely on the quality of teaching.

The results of instruction depend largely upon the ways in which teachers function in a school.

Methods of teaching should be related to the purposes of instruction.

Teaching is a complex art; different levels of competence and training are needed for the various functions teachers now perform and which they are likely to do in the future.

Teachers differ in their interests and abilities to perform the various functions of teaching; the quality of teaching may be improved by recognizing these differences.

Although the fundamental pupose of experimentation in staff utilization is the improvement of instruction, any study must also consider the feelings of teachers; teaching should become more interesting, rewarding, and less difficult.

Instead of responding indiscriminately to pressures resulting from the teacher shortage, experimental studies should be undertaken to learn better ways of utilizing the teachers we have and may be able to obtain so that the quality of education can be improved.

Educators must continuously explore designs for the improvement of instruction.

This BULLETIN should be read with the foregoing purposes and assumptions in mind. Re-stated, these actually become the hypotheses which have been tested during four years of study. The ideas for improving education which have developed out of the studies should be viewed in the same light.

Part I

Goals and Proposals

AND NO BELLS RING

A dramatic two-part report of the ideas developed by the NASSP's Commission on Staff Utilization. Hugh Downs is the Reporter. Actual teachers, students, and administrators make up the cast.

The two half-hour films show the interrelationship among Large-Group Instruction, Small-Group Discussion, Independent Study, and the Teacher Team. These basic ideas are seen in action and are candidly evaluated by students, teachers, and administrators who have experienced them in several Commission-sponsored local experiments.

Part One analyzes the shortcomings of our conventional utilization of teachers. It then details the ways in which the new ideas make better use of their professional abilities and talents as well as time.

Part Two focuses on students, first analyzing their role in the conventional school, then exploring the ways in which all students can be given greater responsibility for their own education within the new patterns of the Commission Plan. It also reports ways in which schools have adapted to the space and schedule changes which utilization of the ideas makes necessary.

The two parts of *And No Bells Ring* are designed to be played together as a full 57-minute program or separately, 28½ minutes each. Both 16mm sound films and television tape recordings are available and cleared for all non-commercial uses, for group showings, and television.

These films were first shown at the Portland NASSP convention, but they were not generally available until last fall. Many principals have found them valuable in stimulating discussion among lay and professional groups in their communities. They were not designed to give final answers, but rather to raise questions. The NASSP presents them as another tool which principals can use to provide leadership in improving instruction.

To order the films write to: National Association of Secondary-School Principals, 1201 Sixteenth Street, N. W., Washington 6, D. C. Enclose $3.00 rental charge for handling one or both films, or we can bill you. Give preferred program dates (please make 3 choices) and the number needed of the free supplementary guides, "New Directions to Quality Education."

CHAPTER I

The NASSP Project To Study Ways of Improving Staff Utilization

ELLSWORTH TOMPKINS

IN THIS BULLETIN we have the fourth, and final, annual report of ideas developed and studies conducted by the NASSP Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. The three previous January issues of the BULLETIN devoted to reports of the project were:

January 1958—*New Horizons in Staff Utilization*—213 pp.

January 1959—*Exploring Improved Teaching Patterns*—290 pp.

January 1960—*Progressing Toward Better Schools*—346 pp.

Reprints of the foregoing issues, as well as this one, are available at the usual price of $1.50 each from the NASSP office.

These four BULLETINS contain reports of experimental studies and demonstrations from the schools themselves—what worked for them, what didn't work, their mistakes, their problems, the stimulation to faculty morale, and many other results. Also, these BULLETINS present statements by involved persons about the ideas these studies have stimulated.

Most principals know the history of these staff utilization studies. The NASSP Committee on Curriculum Planning and Development initiated the studies to see what could be done further to improve the quality of education in the face of the teacher shortage. Discussion of these problems was conducted by the Committee in 1955. Receipt of the first financial grant by the Fund for the Advancement of Education to support experimentation was announced at the Chicago Convention of the NASSP in February 1956. All schools were then invited to submit proposals for carrying on experimental studies. In May 1956 the Executive Committee of the NASSP appointed a Commission on the Experimental Study of the Utilization of the Staff in the Secondary School to conduct and evaluate the studies. The members of the Commission, most of whom have served since that time, are listed on page 2 of this publication.

Four years later—September 1960—the studies were completed. The record of the Commission has been one of distinction. Staff utilization studies have involved nearly 100 junior and senior high schools one way or another. Three publications have been read and discussed by thou-

Ellsworth Tompkins is Executive Secretary of the National Association of Secondary-School Principals.

sands of persons all over the world: *New Horizons for Secondary-School Teachers; Images of the Future—A New Approach to the Secondary School;* and *New Directions to Quality Education—The Secondary School Tomorrow.* A film, *And No Bells Ring,* has also been seen by thousands. A summary report in the form of a 150-page, popular-type book is now being written. Financial support in excess of $1,000,000 has been received by the NASSP from the Fund for the Advancement of Education—Ford Foundation during the past four years. About three fourths of that amount was granted to schools to conduct studies.

It is difficult to state exactly how the activities of the Commission have influenced secondary education. But a great deal of national interest has developed in such matters as team teaching, redeployment of students into larger-than-usual and smaller-than-usual groups for different purposes of instruction, employment of clerical and other assistants to relieve teachers of some activities, and the use of modern technology in education. As a result, much discussion, experimentation, and careful re-examination of secondary education is now occurring. The Commission was appointed at a time when many persons were questioning current practices in secondary education and looking for new ways to do things.

This issue of the BULLETIN includes articles by the chairman and director of the Commission and a tape-recorded talk by a teacher in one of the experimental schools. Then follow statements from the schools themselves.

Some readers may disagree with the reported procedures being followed in the schools. Some may question the ideas presented here and elsewhere by members of the Commission. However, we believe that the reports and ideas are bound to arouse interest and stimulate discussion.

The National Association of Secondary-School Principals is in favor of experimentation. Only by discussion of ideas and by experimental studies can we re-examine practices and look toward possible improvements in junior and senior high schools. We are grateful to all who participated in these experimental studies. The results, as described in this BULLETIN, merit throughtful consideration and analysis.

CHAPTER II

New Directions to Quality Education in Secondary Schools

LLOYD S. MICHAEL

AN EDUCATIONAL revolution unique in the annals of history took place in the United States in the nineteenth century. Our forefathers set out to take children of diverse backgrounds and develop them into American citizens by giving them a basic education. As the country prospered and technology advanced, this education was later extended to include the years of the secondary school. It is now being advanced to higher education. This educational revolution has been successful. Nowhere but in the United States have so many been educated so well.

Always there has existed in the United States a continuing quest, not only to provide equality of educational opportunity for all citizens, but also to improve constantly the quality of education made available to all of the people. We have made great progress in meeting these dual mandates.

Recently a number of individuals and groups have become vocal to improve the quality of secondary education. There are those who insist that the quest for excellence is not in harmony with the ideals of universal youth education developed during the past one hundred years. Some of these persons say that because it costs too much to provide quality education for everyone, there should be more rigorous selection of students to eliminate the unwilling and the unfit. Others say that providing quality education for all youth is too demanding, that it requires too many teachers, too many buildings, too elaborate curricular offerings, and that it costs too many dollars. These individuals and groups say that the times can afford only the education of the able and ambitious, that the average and those of low ability do not matter too much.

There are also critics who insist that quality education demands more services to students and more efforts from them. They urge that students should be required to take more and tougher subjects, write more themes, do an increased amount of homework, and in general be required to have

---

Lloyd S. Michael is Superintendent of Evanston Township High School, Evanston, Illinois; and Chairman of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. This article was an address given at the Governors' Conference, Glacier National Park, Monday, June 27, 1960.

more commitment to quality learning. These critics would also recommend more guidance services so that the schools could advise their students about appropriate courses and that they could provide more challenging programs for the more able students.

Nearly everyone rejects the view that universal secondary education is not a realistic goal for all youth, because it is in essence contrary to the American ideal of equality of educational opportunity. In this country we do not believe in an aristocracy of intellect. The second alternative—more services to students and more efforts from them—is more appealing. This alternative, however, ignores the teacher shortage. We do not have enough teachers to perform all of the services now expected of them, nor are we going to get them in the foreseeable future. The additional services proposed call for more teachers or for more hours of service per week of the teachers we now have, even though repeated studies have indicated that teachers now work an average forty-eight-hour week.

A number of groups have discussed and experimented with ways to improve education. The Commission on Staff Utilization of the National Association of Secondary-School Principals has been one of the more influential of these groups. Deeply committed to the philosophy of providing quality education for all students, and recognizing the seriousness of the teacher shortage, the Commission has taken the position that new directions to quality education must be pioneered. The whole concept of the secondary school—its purpose, its curriculum, its methods, its staff, its facilities, and its finances—must undergo basic, carefully considered changes. Experimentation by the Commission and by other groups has revealed several very promising innovations, but much more searching needs to be done. Unlike industry, which spends relatively large sums on research and is willing to expend risk capital in attempts to discover better ways of doing things, boards of education have spent little money on research and experimentation. Members of boards of education and school administrators have taken very seriously their accountability for the management of public funds. Thus there is the tendency to repeat the *status quo* when new buildings are built, when tools of instruction are purchased, when salary schedules for teachers are adopted, and when curriculum needs are considered.

The scope of the Commission's proposals to improve secondary education is shown in two recent booklets prepared by the Director of the Commission, Dr. J. Lloyd Trump. Copies of these booklets, *Images of the Future—A New Approach to the Secondary School* and *New Directions to Quality Education—The Secondary School Tomorrow*, have been made available to participants in this Governors' Conference. Four new directions to the improvement of education in the secondary school are discussed in these booklets. Let us consider each of these: (1) new concepts in class size; (2) professional roles of teachers; (3) design of the curriculum; and (4) utilization of school funds.

New Concepts of Class Size

Two forces are at work to change existing standards of class size. One is the continuing pressure of higher enrollments on class size because the ratio of teachers to pupils bears directly on the cost of education. The other force is represented by the short supply of teachers, a fact which causes larger classes in an increasing number of secondary schools. Justification for such increases is frequently accepted because much of the research on class size does not present a clear recommendation as to the ideal number of students per class. Students will typically learn about the same number of facts and basic principles of a course whether the class size is twenty-five, thirty-five, or even fifty or more. Those who argue for smaller classes are primarily teachers who feel less tension when classes are smaller and who enjoy the opportunity of getting to know students better when they deal with smaller numbers. Unfortunately, teachers, when given the privilege of classes of fifteen or twenty, typically teach them about the same as if the classes were larger, and the research results, as conventionally measured, do not show significant gains in pupil knowledge of facts and principles.

Standards of class size are currently being modified in many school systems because qualified teachers are not available and because it is necessary to lessen school costs. Too few schools, though, are changing class size patterns for a more signficant reason—to improve teaching and learning. Common practices relative to class size usually overlook two of the most important potential learning outcomes, neither of which is likely to result in the conventional organization of instruction. Certainly one of the most important basic outcomes of education is the development of individual responsibility on the part of the learner. Quality education demands that students learn to become independent of their teachers. They must learn to work on their own in libraries, laboratories, shops, and other places where learning occurs. This independence is not likely to happen when they are meticulously watched and constantly supervised.

Another basic learning goal is the ability of students to make decisions and to discuss significant ideas with others. These desired goals require practice and assistance from teachers in small groups. Experience and research indicate that these groups should not be larger than fifteen. Such groups cannot be provided in a conventionally organized school because of the amount of time required of teachers and because of the added cost. They will be provided only when basic changes are made in the organization of instruction.

The size of classes in a school should vary with the purposes of instruction. Student groups may be relatively large when the most competent teachers available are giving background information, providing explanations, motivating students, conducting examinations, and performing other similar services. Groups of one hundred or more are satisfactory for those experiences as well as for viewing films, television, and demonstrations.

The size of the class should be fifteen or less when the purposes of instruction are served best by small group discussions with teachers participating primarily as observers, evaluators, and consultants. A considerable portion of the school day and week should be devoted to independent study in libraries, carrels, laboratories, and homes. The precise amount of time should vary for each student in accordance with his maturity, competence, and individual needs. The best estimate at the present time is that such independent study activities might include on an average forty per cent of the time students spend in a conventional thirty hour week with wide variations for individuals.

The conventional class meeting five days a week attempts to accomplish all of the suggested learning outcomes in a standard, fixed organization. Class size of twenty, twenty-five, thirty-five, or fifty is inappropriate for the varied purposes of instruction. Such classes are too small and thus financially unsound for those phases of instruction which can take place as well or better in large groups. On the other hand, conventional classes are too large for effective small group discussion. Students are also too tightly scheduled to permit independent study. These standard classes take an unnecessary amount of teacher time and energy and are directly responsible for teachers being scheduled with students twenty-five or more hours per week. If education is to be improved significantly, different standards of class size must be introduced into the school organization.

Professional Roles of Teachers

The present concept of teacher utilization is that almost everything done in a school outside the administrative and maintenance functions must be done by fully certificated teachers. This philosophy results in teachers performing all sorts of clerical and sub-professional tasks which could be done as well, or even better, by other adults with considerably less training and experience. The same feeling of personal involvement of teachers in all phases of the learning process has also resulted in the almost complete reliance on talking and reading to students as their principal vehicles of instruction.

Teaching of all professions is perhaps the most under-capitalized in the way of personnel and material assistance. At least one third of the work teachers now do can be done by others. Based upon experimental studies conducted by the Commission, a staffiing pattern has been proposed which would assign general aides to the supervision of corridors, cafeteria, and study rooms. Clerks would be hired to perform clerical duties. Instructional assistants would be employed to correct some English themes and other work submitted by students, to assist in laboratories and in the preparation of instructional materials. With this plan the school staff would include many part- and full-time adults, and not as many professional teachers.

Another considerable portion of what teachers now do could be done by mechanical aids. Spelling lists, for example, could be recorded on

tape and played repeatedly for students without teacher time. A variety of teaching machines, ranging from simple, self-teaching exercises to complex electronic mechanisms, are becoming increasingly available—and many more will be constructed in the future—to permit highly individualized instruction without taking the time and effort of all teachers. It is a fair assumption that at least another one fourth of teacher time can be saved by the use of self-teaching and self-appraisal equipment and other instructional devices, such as video and sound tape, radio, and closed, open-circuit, and narrow-band television. There are many other types of learning aids still to be developed. These new technological developments will enrich, intensify, and accelerate the learning process. They will contribute significantly to improved education.

The availability of personnel and material assistance and the reorganization of instruction will expand the professional role of many teachers. They will be doing those things with students that they uniquely can and should do. Teachers will have the time and energy to prepare their instruction more effectively, confer with colleagues, work with individual students, improve evaluation, and do many other professional tasks impossible when they are locked into a tight schedule of teaching duties.

Design of the Curriculum

A major curriculum problem is the tremendously increased and rapidly increasing accumulation of knowledge. From this vast knowledge, what are we to teach in our schools? We cannot teach the whole of knowledge, nor can we greatly add to the years of schooling. Therefore, we must be more discriminating in the selection of subject areas and more selective too with content within a subject. We need a general pruning of the curriculum to insure a strong basic education and some specialization instead of a continued proliferation of courses.

Schools have a responsibility that they have not generally recognized to determine what knowledge is of most worth and to eliminate from the curriculum what is useless, inaccurate, and obsolete. The curriculum must be based primarily on the needs of youth and on the demands of our changing society, not on the mastery of a particular subject area by a teacher or by the security or success he may have in teaching it. There is considerable evidence that local schools and state educational authorities are not giving high priority to curriculum planning. Most of the important curriculum projects in secondary education today were initiated and largely developed by persons in higher education.

The present secondary-school curriculum divides knowledge into discrete courses usually taken for two semesters five days a week. Some of this knowledge is assigned to courses which are required of all students. Other segments of knowledge are classified into elective courses. This logical arrangement of the curriculum causes numerous problems in efforts to improve the quality of teaching and learning. The curriculum should be designed to provide all students with sequential experiences in all of the basic areas of human knowledge so that they can have the education

that is most appropriate for them and the society in which they are to live. Every year that a student is in school he should be learning more about language, mathematics, science, history, the arts, and all other important areas of knowledge. In addition, he should have the opportunity in the later years of high school to pursue some offerings in specialized education.

The curriculum should be organized in steps rather than annual segments synonymous with school years. In some subjects there might be seven, nine, or eleven steps during the six years of secondary education. A student would progress through each step on a basis of satisfactory completion of the requirements and readiness to advance. Some students might complete what has been the conventional four years of high school in as few as two years while others might require five or six years. An extended Advanced Placement Program of college-level courses equivalent to the first two years of college may become the regular curriculum for the upper group of eleventh- and twelfth-year students in our better high schools. These steps, carefully articulated with elementary and higher education, could provide the basis for a rational, sequential organization of the vast knowledge with which a school's curriculum must cope.

Such a proposal has many implications for better utilization of time and effort on the part of both teacher and student. The suggested curriculum design would greatly facilitate the re-organization of instruction which is aimed at better staff utilization. The recommended changes should impel maximum development of the intellectual powers of all students. Able and ambitious students would not be held back by the slower progress of others. There would be greater flexibility in the organization of student groups in view of their past achievements. The design of the curriculum would be the servant, not the master of the teaching and learning process.

Utilization of Funds

The records of boards of education and school personnel in handling educational funds is one of high integrity. The typical limitation of such funds has contributed to prudent management. However, some expenditures seem to have more basis in historical precedent than in benefits derived from a higher quality of education. Uneconomic procedures should be eliminated to make the best use of available funds and to promote increased public confidence and support.

There should be greater acceptance that teachers should be paid salaries for the performance of professional services. Other school personnel should be paid proportionately for the kinds and quality of their services. General aides, for example, should usually be paid less than clerks, clerks less than instructional assistants, and instructional assistants less than teachers. Higher salaries should be provided for some teachers more than others, depending on what they do and how effectively they do it. Present salary policies which treat all teachers alike, basing differentials only on the amount of training and the number of years of

experience, are not always sufficient incentives to insure quality teaching. Since teaching machines and other learning devices may perform many tasks now requiring teachers, these developments should receive in the future a considerably higher proportion of school expenditures.

The re-organization of instruction also suggests other implications for better utilization of funds. Large group instruction should be used to conserve funds, as well as teacher time and effort, when the purposes of instruction can be effectively served in large classes. At the same time schools should spend more money to provide student groups of smaller size when such groups are important.

Spaces in school buildings should be designed for maximum use. Auditoriums should be divisible into various sized spaces for large group instruction. Rooms for small group discussion should be large enough to accommodate only twelve or fifteen students. Such rooms need not be larger than 150 to 200 square feet. Teachers should have work spaces and instructional material centers, but it is not necessary to use classroom spaces as teacher offices. Cafeterias should also be planned and equipped for service as instructional areas. Many other examples of more efficient use of space and equipment are apparent.

State Concern About Education

It is obvious from what has been said that many basic changes are necessary if significant and far-reaching improvements are to be made in our secondary schools. A few proposals have been briefly discussed to indicate the scope of the potential innovations. The question now arises, Who is going to give leadership to effect the changes that are needed? Only fragmented improvements are likely to occur at the local school level without a concerted program of action developed cooperatively with state educational authorities. What are the implications for state departments of education and executive branches of state government?

A state department of education may play several roles in the re-direction of quality education. First, it may actually inhibit progress by insisting on strict adherence to all existing policies and regulations pertaining to the operation of local schools. In many instances, a state department obviously needs to enforce policies and standards, but when a state department refuses to permit deviations on an experimental basis, when the experiment is soundly conceived and carefully evaluated, the department is an inhibitor of change. A second role may be one of permitting local school districts to experiment and, during the period of experimentation, to waive regulations. Such a policy of permissiveness is frequently regarded with something less than approval, since it may have the implication that the standards are being temporarily set aside. A third role could be vigorous leadership in encouraging and fostering experimental efforts that represent deviations from existing standards and procedures. Alternative policies and standards should be permitted those schools whose purposes and programs differ basically from conventional schools. This latter point of view seems to be the only constructive one

if there is to be active searching for improvements in the quality of education.

A number of state departments of education have been assuming this kind of leadership. Under the supervision of the Commission on Staff Utilization, state projects have been initiated in Illinois and Utah. In these states cooperative efforts involving the state departments of education have produced programs aimed at excellence in teaching and learning. A recent activity in the Department of Education in New York has resulted in the identification and dissemination of several promising innovations. Many other state departments doubtless have exercised the same effective leadership.

The executive branch in the state has the same potential relationship to the state department of education as the education department has to the schools. The executive branch may inhibit, permit, or influence the direction of change. It is imperative that we have leaders who recognize that major improvements in education can be accomplished only by making basic changes in conventional standards and practices. The secondary school of tomorrow—if it is to be a markedly better school—must differ in many ways from the American high school of today. That we may have quality within the context of quantity, we must have vigorous leadership that has faith in and gives support to our dynamic system of universal secondary education.

ON TO DETROIT

Convention Theme:

Individual Competence and the National Welfare

BELOW are the topics which will be discussed at the NASSP 45th Annual Convention in Cobo Hall, Detroit, Michigan—26 on Monday afternoon, 26 on Tuesday afternoon, and 14 on Wednesday morning. Information about the general sessions, tours, exhibits, *etc.* will be available later.

Monday, February 13

I—A CURRENT CRITICAL ISSUE IN SECONDARY EDUCATION—Social Studies in the Comprehensive Secondary School. (Group I on Tuesday afternoon will be a repetition of Group I on Monday. Summary of buzz group discussions will be given on Wednesday morning, Group I.)

II—How Modify the Curriculum To Benefit the Academically Talented Student?

III—Assessing the Conant Report on the Junior High School

IV—New Developments—Commission on English, Biological Sciences, Economic Education

V—Keeping Up to Date with Developments in Mathematics, Science, Modern Foreign Languages, and English Language Arts

VI—Radiation and Fall Out—Benefits and Hazards

VII—What Crucial Problems Confront the Junior High-School Principal?

VIII—The Case For and Against Core Programs and Block-Time Classes in the Junior High School

IX—The Drop-Out Problem—A Growing Educational Concern Today

X—High-School Affiliation Program—What Potential for International Understanding?

XI—How Develop an Effective In-Service Education Program?

XII—How Supervise Instruction in the Large Urban Secondary School?

XIII—The Daily Schedule—Shorter Periods, Longer Periods, Variable Periods, or What?

XIV—The Case For and Against Multiple High-School Diplomas

XV—Curriculum Design—Strengths and Weaknesses of the Track System

XVI—Under What Conditions Does Merit Rating Succeed or Fail?

XVII—What Can the Principal of the Small High School Do To Improve the Educational Program?

XVIII—Developing Tomorrow's Leaders Today Through the National Honor Society

XIX—How Much and What Kind of Student Activities in Today's Secondary School?

XX—What Policy and Organization for Supervision in the Large Junior High School?

XXI—How Develop a Desirable Student Behavior Policy?

XXII—What School Policy for Adapting Instruction to the Slow Learner?

XXIII—A New Issue in Grouping—Vertical Enrichment *vs.* Horizontal Enrichment

XXIV–Problem Clinic–The Experts Comment on Your Questions
XXV–How Improve the Reading Skills and Habits of Junior High-School Students?
XXVI–What is Happening in the Use of Teacher Teams and Teacher Assistants–Report of a Survey

Tuesday, February 14

I–A CURRENT CRITICAL ISSUE IN SECONDARY EDUCATION–Social Studies in the Comprehensive Secondary School. Group I on Tuesday afternoon will be a repetition of Group I on Monday. Summary of buzz-group discussions will be given on Wednesday morning, Group I.)
II–Enrichment or Acceleration for the Academically Talented Student?
III–How Improve the Instructional Program in the Junior High School?
IV–Do Testing Programs Benefit or Dominate Instruction?
V–Keeping Up to Date with Developments in Mathematics, Science, Modern Foreign Languages, and English Language Arts
VI–What's Ahead in the College Admissions Scramble?
VII–Assessing New Issues in Junior High-School Organization
VIII–The Case For and Against Core Programs and Block-Time Classes in the Junior High School
IX–How Can We Make the Best Use of the Time and Energies of the Guidance Counselors We Now Have?
X–How Can Faculty Meetings Contribute to Professional Growth?
XI–What Solution to the Study-Hall Problem–Parking Lot or Educational Opportunity?
XII–New Developments in Flexible Daily Time Schedules
XIII–The Student Council–Partner or Plaything?
XIV–What Are the Main Jobs of the Principal? How Can He Accomplish Them?
XV–Curriculum Design–Strengths and Weaknesses of the Track System
XVI–How Can Summer Schools Enrich and/or Accelerate Student Progress?
XVII–What Are Recent Developments in Standards for Accrediting Secondary Schools?
XVIII–How Use the Library To Improve Instruction?
XIX–What Kind of Control for Junior High-School Interscholastic Athletics?
XX–How Assess Which Technological Instructional Aids To Use?
XXI–How Develop a Desirable Student Behavior Policy?
XXII–How Meet the Problem of the Slow Learner in the Junior High School?
XXIII–How Much Ability Grouping for Students in the Junior High School?
XXIV–What Kind of Policy for the Promotion and Non-Promotion of Students?

XXV–How Improve the Reading Skills and Habits of Senior High-School Students?

XXVI–Thorny Problem–How Weight Student Marks in Honors Courses?

Wednesday, February 15

I–A CURRENT CRITICAL ISSUE IN SECONDARY EDUCATION–Social Studies in the Comprehensive Secondary School. (A summary of proposals of buzz-group discussions held on Monday and Tuesday afternoons, Group I.)

II–The *Pros* and *Cons* of Accelerating Academically Talented Students

III–Assessing the Conant Report on the Junior High School

IV–The Educational and Cultural Image of America Overseas

V–How Develop and Maintain Good Principal-Faculty Relationships?

VI–What Responsibilities for the Principal in Organizing, Supervising, and Evaluating Teaching Teams?

VII–What Crucial Problems Confront the Junior High-School Principal?

VIII–Current Developments in Salary Schedules for Secondary-School Principals and Vice Principals

IX–What Kind of Guidance Services for the Junior High School?

X–What Role for the Principal in Emphasizing Moral and Ethical Values Among Students?

XI–What's the Score on Provisions of the National Defense Education Act?

XII–What Is Happening in the Use of Technology in the Classroom and in Class Size–Report of a Survey

XIII–The Daily Schedule–Shorter Periods, Longer Periods, Variable Periods, or What?

XIV–Persisting Problems in National Contests and Activities

Members of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School

LLOYD S. MICHAEL, *Chairman*
Principal
Evanston Township High School
Evanston, Illinois

MATTHEW P. GAFFNEY
Dorset, Vermont

HERMAN A. GRUHN
Principal
Sierra Junior High School
Riverside, California

C. W. SANFORD
Dean of Admissions
University of Illinois
Urbana, Illinois

CLIFFORD SKINNER
Principal
Cleveland High School
Portland 2, Oregon

J. G. UMSTATTD
Professor of Secondary Education
University of Texas
Austin, Texas

GLENN F. VARNER
Assistant Superintendent for Secondary and Vocational Education
St. Paul Public Schools
St. Paul, Minnesota

RAYMOND G. WILSON
Executive Secretary
Commission on Secondary Schools
Southern Association of Colleges and Secondary Schools
Atlanta, Georgia

JAMES E. NANCARROW, *Ex-Officio*
Principal
Upper Darby High School
Upper Darby, Pennsylvania

J. LLOYD TRUMP, *Director*
Associate Secretary
National Association of Secondary-School Principals
1201 Sixteenth St., N. W.
Washington 6, D. C.

Associate Directors of the Commission

ROBERT B. MOORE
(formerly, Stanford University)
Orange Coast College
2701 Fairview Road
Costa Mesa, California

LEE PIGOTT
1176 West Marietta Street
Decatur, Illinois

CHAPTER III

Some Questions and Answers About Suggestions for Improving Staff Utilization

J. Lloyd Trump

QUESTIONS about staff utilization are frequently asked at meetings and in letters. The questions and answers that follow mainly concern proposals advanced in the publications, *Images of the Future* and *New Directions to Quality Education*, and the film, *And No Bells Ring*. The answers are those given by the writer. Readers are invited to submit additional questions.

Teaching Staff

What about the reactionary staff members, the older, those who resist such a change?

All teachers need not change. It would be just as wrong to force all teachers to be team teachers as it is today to force all teachers to be self-contained classroom teachers. We must recognize individual differences among teachers. After careful discussions among the staff, those teachers who are interested in trying new approaches should be given the opportunity to do so. The results should then be evaluated and made known to all of the other teachers. The important thing is to provide the opportunity for change to those staff members who are interested in it. There will always be some classes that can be of the conventional variety.

Will this new plan allow teachers time for professional planning as well as time to supervise small-group work?

This is one of the basic objectives. The average teacher should not be scheduled with groups of students more than 15 hours per week. This will provide teachers with the time they need for professional planning. Those 15 hours, however, include work with small groups of students as well as large-group instruction. As a matter of fact, most of the time of the teachers in a suggested program will be spent in working with classes of no more than 15 students. Until teachers have time for professional planning, with all that that term implies, there is little likelihood that major improvements in the quality of education will result.

J. Lloyd Trump is Associate Secretary of the National Association of Secondary-School Principals. For four years he served as Director of the National Association of Secondary-School Principals' Commission on the Experimental Study of the Utilization of the Staff in the Secondary School.

Will there be some problems when you move a traditional staff into a situation with status levels?

Someone has to be the team leader and some have to be assistants to the team leader. Beginning teachers will have to earn the right to advance to these categories. But even the beginning teacher has instruction assistants and clerks. The instruction assistants are better trained and receive higher wages than the general aides. I do not like to call these status levels, but I expect that's what they mean to some people. Actually what this means is that different individuals are selected to do different tasks. Those charged with administration and supervision cannot escape the responsibility of knowing their staff members sufficiently well so they can make choices for different kinds of positions. If principals and supervisors do not do these things, they have no right to *their* positions. The fact that there are opportunities to rise in the profession as classroom teachers is likely to be less deadening in the long run than the present situation where all individuals are treated alike and no opportunities for advancement are provided unless the person leaves the classroom to take some other position.

What are the implications of these proposals as related to merit rating?

More than a decade ago I wrote an article in the *Nation's Schools* entitled somewhat crudely, "Merit Rating Puts the Cart Before the Horse." I said in that article that we had no business fooling with merit rating so long as the conditions under which teachers were forced to work made it very difficult for them to demonstrate merit, because these conditions assumed no individual differences among teachers in terms of assignments and responsibilities. I feel even stronger about these ideas today than I did when I originally wrote the article. My objection to merit rating is that it assumes all teachers do about the same things and that, by some magic device, we can ascertain that some do these things better than others and should be paid more money. We need to break this standardization of the teaching job into a variety of opportunities so that individual merit actually can show itself. Some teachers are at their best in working with small groups, some do best with large groups. Some are very effective when provided audio-visual aids, while others are frightened by modern technology. Today's school with its standard assignments forces all teachers to do about the same things and to teach all phases of the subject even though some are more competent in one phase than another. The proposed change would make possible differentiated assignments. Merit can show itself and principals who work closely with teaching teams will know the staff well enough that they can make wise decisions in assignments. Then salaries can be differentiated on the basis of what people do. To me this is a completely different concept than the usual merit rating concept.

Will teacher education institutions train teachers for the kind of school you describe, or must they be trained on the job?

Many higher institutions are beginning to do some interesting things in improving teacher education. However, we cannot wait for higher insti-

tutions to change. There must be much in-service training on the job. Much of this must come during summer months or when work is lighter. Those teachers who wish to study better ways of doing things should be given consultant help and paid to work at it during the summer months. The fewer hours per week of teaching students, recommended in this program, also permit in-service training. Above all, it is necessary that proper conditions for in-service training be created.

Are the energies of the best teachers only channeled to teaching large groups?

This is a common fallacy. As a matter of fact, during our experimental studies, the easiest thing to do has been to teach large groups. Teachers are accustomed to lecturing and demonstrating in standard size classes. Many of them enjoy it even more and are more effective with four or five times as many students, especially since they have more time to prepare. But the very difficult tasks are those in connection with small-group discussion and independent study. Teachers are not trained to participate in small-group discussion. They want to teach a group of 15 the same as they would a group of 30. Teachers must learn to listen, observe, aid groups in facing up to important issues, and correct any errors. In working with students engaged in independent study, teachers must learn how to suggest activities that will be clearly significant. Today, homework and other asignments given students for independent study are not much more than busy work and will not, in the long run, develop creativity and the powers of intellectual inquiry. That's why merely doubling homework is not going to improve greatly the quality of education. Independent study must be something quite different from what it is today. Thus it is that some of the best teachers in the school of the future will be teachers of independent study and of small groups.

In looking at the film, "And No Bells Ring," I wondered since when is counseling students a non-teaching task?

That certainly was not the impression we hoped to achieve in the film. Actually counselors should be members of teaching teams. The present dichotomy between teaching and counseling must disappear. Much progress of students through school, as well as decisions with respect to the kinds of groups in which they will be assigned, must be professional decisions in which teachers and counselors participate in close working relationships. I have little faith in the kind of counseling that means talking to a student once or twice a semester in a 15-30 minute interview. Counselors need to work with teachers to observe pupil behavior. Teachers need to understand many of the things that counselors know in improving the quality of instruction.

Do you recommend the use of a volunteer assistants group in your program?

Although a few schools have started experimenting with volunteer assistants, I would certainly not recommend that procedure permanently

for staffing a school. Clerks, instructional assistants, and general aides are staff members in the same way as are professional teachers, custodians, and bus drivers. All personnel should be carefully selected on the basis of competence to do the jobs assigned to them. They should be paid in accordance with the established rates of pay for various personnel.

Questions About Students

Is team teaching and the other approaches described acceptable to students of all academic or ability levels?

Evidence seems to be quite clear on this point. Studies, for example, in a school district just outside San Jose, reveal that the group who gained most in achievement was always in the lower quartile. Our experience has been that when there are enough students to divide the large group on the basis of achievement, the teachers achieve more because they can gauge their presentations to the past achievement level of students. Small groups should be created for specific student needs. For example, the shy students could be put together so they would feel more free in expressing ideas. The more talkative ones could be put in a separate group so they could learn to respect each other's opinions. The amount of independent study, as well as the nature of activities, can be varied with the maturity and competence of students. Thus individual differences can be met better than in the conventional classroom where it is so difficult actually to provide for the wide variations which exist there.

Do these approaches provide for the development of the "whole" child, or does it neglect such aspects as social and physical development? Is it intellectually oriented?

I do not regard the objectives mentioned in this question as opposed to each other. Certainly there can be no quarrel with the objectives of the development of intellectual curiosity and creativity. These will be developed best when students have more extended periods of time to work independently or in small groups in laboratories, libraries, shops, gymnasiums, and other learning resources centers. Also these qualities are more likely to be developed when students are working in subject areas and at tasks which are interesting and seem more important to them. But the plan also insists on organization of small groups. Sociometric devices are regularly used to discover social needs of students and to learn what methods are accruing. Emphasis is placed on, and the schedule permits, motor activities in gymnasiums, shops, and the like. Physical activities actually may motivate intellectual curiosity. More flexible schedules make all of these educational objectives possible.

Does the plan provide for non-readers?

Certainly the use of modern technology is appropriate for non-readers and for improving speed and comprehension of other readers. As a matter of fact, this has been one of the contributions in a number of our studies where special time was provided for the use of reading accelerators and

other devices. Consultants were brought in to train English teachers whose college training had provided little help in teaching reading. The use of large groups, small groups, and independent individual activities is just as appropriate in the training of skills as it is in the acquisition of knowledge and the development of intellectual inquiry.

What about the question of student evaluation? Who makes out the grades?

Evaluation should be on the basis all of us have talked about so long, but have not actually practiced. Students should be evaluated on the basis of what they can do and what they know, rather than on how many hours that are spent in a course. A grade of B, or a statement that a student has had two years of typing, is relatively meaningless. Also need is a comprehensive statement describing in specific terms the student's achievement up to this period.

Do you accept the idea that the pupil who makes decisions will also make mistakes? How do we deal with that problem?

The suggested plan is not for a child-centered school. A few people had that idea back in the 1920's, but it didn't make sense then nor does it now. Immature students must profit by their mistakes and adults must show them the way to improve. First, the instruction should be so good and by the best possible teachers so that the amount of wrong-learning is minimized. Tests will be given frequently to discover errors of fact and concept. Teachers meet with students in groups of 15 where the emphasis is on expression of ideas by all students. Here, again, are many opportunities, more than in the conventional school, to discover student errors and to correct them. Instruction assistants and teachers are working with students during independent study time where they also have opportunities to correct student mistakes. More emphasis, however, on students doing things for themselves and assuming more responsibility for their own learning should provide more training in problem solving and decision making. Growth in these desirable objectives of education is, therefore, potentially more possible.

What happens to underachievers who fail to master the level of basic subject matter to which they are assigned?

Professional decisions, that is, decisions made by professional teachers, counselors, and administrators, will determine how long a student should work at a given level. Such decisions will be made on the basis of much knowledge about individual students as well as generalized knowledge about child growth and development. Students should progress through stages of education at different rates instead of going according to the present lockstep of one grade per year. Some students will require longer time and some less time to complete a given stage. Obviously, some students never will master as much in a given stage of education as the teachers feel is essential, but the requirements of a child's own growth and development suggest that he go on to higher stages.

When a student finds a subject or subjects of special interest to him and spends a great deal of independent study time on the area, are you concerned about his neglecting other areas?

Again, this must be a matter for professional decision. Whims of a student, or those of his parents, should not determine completely what is best for him. The trouble with today's school is that these time decisions are made by a clock programmed for standard periods. Tomorrow's school should allocate time on the basis of professional decisions.

Doesn't your plan ignore the basic tendency of human nature to get by with as little work as possible?

I assume this question relates to students, but it also could relate to teachers. So far as students are concerned, we must assume that, if they are motivated by contacts with the best possible teachers, their instruction is made more exciting and interesting through the use of modern technology, and that, if they have the time to work on matters that seem important to them, there will be less "getting by" than in today's school where these matters are not handled so well. Of course, nothing will work perfectly for all individuals. Our hypothesis is that the changed proceedings will work better than the present ones. So far as teachers are concerned, supervisors can soon tell whether a professional teacher is doing what he should do. Those who cannot serve or are unwilling to work as professional teachers may find employment as instruction assistants or may be happier in some other line of activity. The diversity of activities, the better utilization of professional competencies, and the motivations present should produce a higher level of work on the part of professional teachers.

Is it possible that much personal interest and responsibility for the individual student will be lost in a complex teaching organization such as you suggest?

Actually teachers should know students better in the proposed organization. Teachers will see students part of the time in classes of 15 or less. At other times, teachers will work with students on an individual basis. Every student will have some teacher who is designated as his principal adviser. That teacher will see the student in the small group and know what he is doing in individual study projects. That teacher will participate with the guidance counselor in making professional decisions regarding the student's program. Teachers will have more time to know individual students because they are scheduled with groups of students fewer hours per week. Better provision for meeting individual differences among students is one of the basic reasons for the proposed changes in secondary education.

Questions About the Schedule

Is this a new trick to shake up the old schedule system?

I prefer the word plan to trick, but you are absolutely right. The rigid schedule of standard periods, classes meeting five days a week, credits

determined on a semester or annual basis must go. Time must be the servant rather than the master of the educational program. The fact that students are scheduled in groups fewer hours per week contributes to flexibility in schedule making.

How will this program actually work? What will we do with the 500 or more students all day?

Every student will have a schedule; the school will continue to know where its students are. If the school day for a given student runs from 8:30 A.M. to 3:30 P.M., his schedule will show exactly where he is—in what kinds of large-group classes, what kinds of small-group classes, and where he is doing independent study and when.

How much time during one school day will a student have to devote to individual study?

This will depend on a professional decision made with respect to an individual student. *Images of the Future* suggests that, for the average student in the tenth grade, the time per week would be 12 hours in large groups, 6 hours in small groups, and 12 hours in individual independent study. This "average" student, therefore, would have two hours and 24 minutes per day in shops, laboratories, cubicles, libraries, or whatever resource center is best for him. But variations among days and student are essential.

How many subjects will a student be required to take each semester?

Remember, subjects do not meet a period a day five days a week. Students will have some large-group presentations and small-group discussions in all subject areas each year they are in school. Such instruction will occupy most of the time in the elementary- and early junior high-school grades. By the time a student is in his senior year, such instruction would occupy no more than 10 or 12 hours per week. The balance of the time would be spent by the student in studies-in-depth in areas where he is particularly interested and competent. Thus, students would continue to receive a broad basic education in all areas and at the same time have opportunities for study in depth—and all of this without merely adding two periods to a school day!

School Organization

Is the program of value in the elementary school?

Everything we have written and said is as relevant for the elementary school as it is for the secondary school and higher education. Of course, adaptations must be made in relation to the maturity levels of students.

Is this plan designed especially for large school systems or will it work in small schools as well?

Everything that has been said is relevant for all sizes of schools, urban as well as rural. Size and character of a given school may require adaptations, but the basic ideas are the same for all types.

Questions About Costs

In your example of staff costs, you show that the new program will not cost any more than the old. Is this right?

As a first step, it is possible to provide clerical assistants and instruction assistants without adding to staff cost. But this is only a first step. Actually, professional teachers must be paid salaries considerably above those now being paid. In the final analysis, that will require more money, but the output of these professional teachers, because of better use of competencies, should warrant the extra expenditure.

Aren't there additional costs to this program above the staff?

The program suggests much greater use of modern technology in education. No profession today is so undercapitalized as is the teaching profession. Modern technology does cost money. Some of this extra cost will be absorbed when present uneconomic procedures in the expenditures of school funds are eliminated. Some of these are described toward the close of *New Directions to Quality Education.* It is natural to assume that quality education will cost more money. The important thing is to measure the output in relation to the input in education. What extra quality results are attained when additional funds are spent to provide teachers with the best that modern technology can offer?

Educational Facilities

What do we do about our present buildings which are not suited to this type of program?

Many schools are making do with what they have. Cafeterias are being used for large-group instruction. Other spaces have been remodeled. Movable partitions have been introduced. Unused study halls have been remodeled. There is no set formula for all schools, but local imagination and creativity will have to be exercised. The old cliché, where there is a will there is a way, works here also.

Would a new building designed for this program cost more or less than one designed for a conventional program?

If you went the whole way in this program, you could provide the spaces for large-group instruction, small-group discussion, and independent study, including instructional material centers and learning resource centers, with no more space than in a conventional school. This does mean that rooms are just large enough for the purposes required and that space is used to the best advantage. The question is more involved than I have time and space to answer here. The Ford Foundation's Educational Facilities Laboratories are doing some excellent work along these lines.

Evaluation

Has the plan proved successful; what are the names of schools using the plan at present?

The studies under the NASSP Commission have been segmented in nature. Therefore, the potential gains have been strictly limited from the start, because the maximum gains are possible only when the interrelationship of the various proposals are considered and put into operation. Everything that we have suggested has worked successfully some place or other. No school completely incorporates all of the ideas at present. But this need not keep others from additional experimentation. Actually, one of the problems in American education is our waiting to see someone else do it first. We need much more experimentation and research in all schools. I should add that there are three or four schools now that are going further than any other schools did during the four-year Commission study. We shall all look forward with interest to the programs developed in those schools.

What are the specifics of the research on the proposed ideas?

The results of studies under the NASSP Commission are published in the January 1958, 1959, 1950, and 1961 BULLETINS of the National Association of Secondary-School Principals. The magazine, *Education Index*, lists under the heading, "Staff Utilization," articles in a wide variety of publications dealing with the ideas presented by the Commission and others.

QUESTIONS ABOUT GETTING STARTED

How would you orient a community to this type of plan?

Most people are basically interested in quality education. It is a responsibility of professional teachers and administrators to help them understand what is meant by quality education and how it can be accomplished. Today's school makes very difficult the development of independent responsibility for learning, the acquiring of the habits of intellectual inquiry, problem solving and decision making, and many other highly desirable educational outcomes. Most citizens understand quite readily the principles involved in better use of professional competencies of staff. Most citizens also recognize the desirability of the use of modern technology in education. What they need help on is understanding how the school is going to accomplish these desired purposes. The usual methods of public relations will work here. Of course, citizens must be furnished regularly with evaluative data showing whether the purposes described are actually being accomplished better than they were in the former school.

Actually, how do you get started?

The last section of *Images of the Future* presents a number of suggestions under the heading, "Next Steps." Many suggestions are also provided in *New Directions to Quality Education*. The important thing is to plan carefully with the staff and community, start slowly with those persons who are interested and competent to begin, provide time, consultant help, and other motivation, and be sure to set up a research

design in such a manner as to produce evidence whether what you are doing is better than what you were doing in the past.

How do you keep up enthusiasm for new ideas, or will the teachers and community fall back into a "rut" again after the new program has started?

There is no satisfactory answer to the question other than leadership on the part of administrators, supervisors, key persons in the teaching corps and others constantly seeking better ways of doing things. There is never any best way, but there is always need for constant study to seek better ways. The best schools in this country have always been those in which experimental approaches were being tried. "Ruts" come from keeping in the same path too long a time.

Why do you insist on basic changes in all phases of secondary schools?

Everything we do in schools is related to everything else. The need for smaller classes leads to the quest for saving time and expenses by teaching some things in large groups. Large groups require different spaces and the use of audio-visual aids. Small groups require more teacher time so ways must be found to save time and energy for teachers. Teacher assistants and various teaching machines (programmed instruction devices) provide help. All these have to be coordinated so teaching teams are organized. Students need time to work independently in laboratories, libraries, *etc.* so the schedule must be changed. Professional decisions about students are required so guidance counselors must play new roles. Changes in methods of teaching suggest re-appraisal of *what* is taught. Soon the Carnegie Unit is called into question—and so on. The effectiveness of any one of these changes is limited by what is done in the others.

CHAPTER IV

Professional Responsibilities

WANDA MITCHELL

WHEN the summer task force asked me to make these remarks about responsibility, I really did misunderstand the assignment. I thought they wanted me to speak to *new* teachers. I accepted the assignment with some reluctance because that makes me an *old* teacher. I am going to use these words "old" and "new" for many things. After you have been in this school one year, you are an *old* teacher. Then when I found out that the new teachers and the old teachers were going to meet together, I had reason to feel even more reluctant, because if I talk with you about the ideals which I think are part of professional responsibility, those of you who are old teachers will know how I fail to measure up; so I am on the spot either way.

The new teachers who are here have come into our school system with an entirely different status in the teaching world. The market for teachers is different. As long as your body is warm and you can keep the kids in the classroom, you don't have to worry about losing your job. Some of us started teaching back when you had to be very, very careful about what you did. It's only reasonable to suppose that as the pendulum swings from one extreme to the other, it would do so in teaching. Those of us who are older began teaching back when teachers couldn't do anything. I contemplated wearing the costume that was appropriate back when I started teaching, but I couldn't get in it now so I couldn't do that. It's only reasonable that the pendulum would swing away from all those restrictions that were placed on us, and teachers who enter the profession now might be on such a "palsy-walsy" basis with the students that you can't tell the students from the teachers without a program.

The perfect teacher in my day may have been quite different from the perfect teacher of today. I am trying to back up what I say by some quotations. They're on these little cards. I won't say "Begin quote" or "End quote"—whenever I use one of these little cards; you'll know I'm quoting. Here's a description of the perfect teacher. I'll let you decide whether it's one of the old ones or one of the new ones:

Wanda Mitchell is Teacher and Chairman of the Speech Department, Evanston, Illinois Township High School. This has been transcribed from the tape recording of a talk presented at the general faculty meeting of the Evanston Township High School on September 14, 1960—not edited.

"The perfect teacher must have
The education of a college president
The executive ability of a financier
The humility of a deacon
The discipline of a demon
The adaptability of a chameleon
The hope of an optimist
The courage of a hero
The wisdom of a serpent
The gentleness of a dove
The patience of Job
The grace of God
And the persistence of the devil."

Now, if the new teachers will just think about the fact that you have just entered this profession, those of us who are old will think about it, too. In the first place, we who are older have to be very sure that we don't stand in the way of progress. The only way to have progress is to have change; you can't progress without change. We have a tendency to hold so dearly to the way we have always done things that we are disturbed by all this new blood that comes into our profession, even if it's blue and red blood. Well, our old "tired blood" can stand pepping up, but we would rather keep things the way they were. Let me support that with a quote. Maeterlink said this, and I think you'll agree he's warning those of us who are older to be very, very careful:

> At every crossway in the road that leads to the future, each progressive spirit is opposed by a thousand men who are self-appointed to guard the past. Let us have no fear lest the fair towers of former days be sufficiently defined. The least that the most timid among us can do is not to add to the weight that nature has to drag along.

So those of us who are older, as we consider our professional responsibilities, will have to realize this danger of trying to guard and protect the past. In fact, let me say that we older teachers must be "eugerons." Now, even the college-level English teachers don't know what this word means, so I shall have to define it for you as you may want to use it. It's spelled E U G E R O N , and was coined by a physician, Charles Ward Champton, to describe a certain type of person about my age who ought to be able to assume these characteristics: "If a man has sense enough to realize that in many ways he is not what he was ten years ago, and acts accordingly, he is well ahead of the game. Know your limitations, adapt yourself to them, and enjoy your privileges to the utmost." Those of us who are older must try to be eugerons.

Now with the old and new both having been given some warning, you can classify yourself wherever you feel you ought to be. You can be old mentally and old chronologically. You can be new in spirit and old in years. You put yourself where you belong. But all of us—old and young —need to consider our professional responsibilities. One of the best ways

to begin is to look the word up in the dictionary. I found that if I want to do something which is professional, if I want to act in a professional manner, I am supposed to do those things which are "worthy of the high standards of a profession." And I'm going to discuss being professional in three specific areas.

To the Content We Teach

The first one is in the classroom. In the classroom I think first we have a responsibility to the content we teach. If I may use a figure of speech from the area of alcoholism, about which I know less than perhaps is good for me, I would like to say this: When we are treating content with boys and girls, it ought to be the distilled product and not the froth off the top. The kind of lesson you prepare in forty-five minutes in one evening is not a professional job. The kind of lesson that comes from deep study, deep concentration, rich background of material which you distill and distill and distill until what you share with the class is content that's worth something—such preparation is part of being professional.

Then I think we have to love our subject. Without mentioning any names and without meaning to cast ridicule on anybody, I recall a Latin teacher here who loved her subject dearly. You respected her because she thought Latin was the most important thing in the world. She told her classes one day that anybody who could learn Latin could do anything, and although she didn't know a volley-ball from a grapefruit, she went to the gym and played on the faculty volleyball team because she knew Latin. Now I will admit this was an unusual situation, but I still think that if you are professional, you have to be sold on the content area that you teach; otherwise, you ought to be in some other field. Now I know we're *assigned* subjects we don't want; this is aside from that. The subject you *choose* to teach ought to be one that you like and feel is important, not only in your life but in the lives of boys and girls you teach. I don't think you can be a good teacher, professionally speaking, if you're not sold on your subject.

I think to be professional you need to have the respect of the colleagues in your field. If you are a math teacher and other math teachers don't think you are good, then you should begin to question yourself. I would if I were a math teacher.

I think that being professional means we must master the tool with which all teachers teach—the English language. I don't think that we should have to be ashamed of letters that go out from teachers. I think we should be able to speak and write the English language correctly; it's part of being professional.

I think we need to grow professionally, not have the same year of experience twenty times. We need to be different from the way we were when we began teaching. I can't imagine an English teacher being professional who doesn't buy books, who doesn't read books, who doesn't keep his room filled with books. These are part of the tools. How does he know the changes in his field if he doesn't read? Content changes; we

aren't professional if we don't keep up with these changes. I don't think a speech teacher is professional who does not go to the theater, does not watch television, does not practice the things he purports to teach. All this is just part of being professional. I can't imagine how a teacher could be professional in the field of music and not go to a concert; I can't imagine how a teacher in the field of physical education can abuse his body and think he is being professional—this just doesn't make sense to me. I think that being professional means that we grow in our own field and that in that area we can command respect, whatever it takes on our part to prepare to do that. If the only reason I'm a teacher (and we all say this . . . I say it, too) is that I love to work with children, then I ought to be in the Boy Scouts or Girl Scouts or the Board of Recreation or Disneyland. If my only desire is to be with young people and work with them, then I shouldn't be in this academic area working with boys and girls. I think the content area is important.

To the Pupils We Teach

The second area in the classroom where I think we have professional responsibility is the pupils themselves. We get very much disgusted (at least I do) when parents expect us to walk the straight and narrow path while they walk the primrose path, doing what they please. Any example they can't set for their children they expect us to set for them. I resent this. On the other hand, I am aware, and sometimes painfully so, how many times they copy me, the people in my classes who follow me. The attitude I have toward school rules is copied by the students in my classes. If I sneak in late, if I sneer at restrictions, so will they. If I feel that my job is measured by wages and by hours, they are likely to feel that their results are measured by grades. If I resent everything that happens to me in the way of suggestions and criticisms, my students will begin to do this. If I'm careless, if I don't read directions, if I don't follow instructions, then I can also expect the students also to file the reports away and not read them. I'd like to read only two paragraphs from an example of this. Frederick J. Moffett, who is chief of the bureau of instructional supervision of the New York State Department of Education, has written some blank verse which he has entitled "Thus a Child Learns," and I think a teenager would be included in this. I want to read just the last two parts because there are times when I see students in my class doing just what I have done, laughing at the things I laugh at, making the kinds of remarks I make, so that I'm very sensitive to what he said here.

"Day by day the child comes to know a little bit
of what you know
To think a little bit of what you think
To understand what you understand
That which you dream and believe and are
In truth becomes the child.
As you perceive dully or clearly

As you think fuzzily or sharply
As you believe foolishly or wisely
As you dream drably or goldenly
As you bear false witness or tell the truth
Thus a child learns."

And one of our professional obligations in the classroom is to see that what they learn is what we want them to learn. They copy everything. We know that this is one way people learn—by imitation.

Our language, for instance. There was a time when we were very, very formal, and we called students by their last names. Now we call them by their first names. We're so anxious—we've read all these things about how you show the children that you love them—and so we try to get down to their level and show them how much we love them and how we sympathize with them, showing them the feeling of empathy and sympathy we have, and so we begin to use the kind of language that is most appropriate at a barbecue in the back yard. Even a dog can tell you love him without your getting down on all fours. A student can sense this; he must have more intuition and ability to understand these things. He knows without our lowering ourselves to all fours.

We say that we require boys to wear belts and keep their shirts tucked in because this provides a better learning environment. Maybe the same applies to us. The way we dress, the language we use in the classroom provide an environment where learning is a dignified, challenging thing which is stimulating or it can be cheap and common and might just as well be done at home on television.

I don't like to use personal instances, and I've planned only two here. This one is such a good example, I hope you'll forgive me if I do give a personal story. In the little town where I live in West Virginia, we have only one stoplight. It's there because the main state route goes by an intersection near a grade school. This summer, when I was crossing the street with my father, the light said "Stop" for me, and I looked both ways—there's hardly ever a car coming, anyway—I looked both ways and nobody was coming. I started to cross the street and my father grabbed me and said "Wait." And I said, "Well, there's nobody coming. We can get across." But he said, "There may be some children nearby who will see you cross against the light, and their judgment isn't as good as yours." There are things that we can do because we're adults that we must not do if we're professional in front of those whose judgment is not as mature as ours.

I know the men from the army will regret that I'm illustrating this entire section with a quotation from the navy manual, but none of you gave me your manual and Mr. Curry gave me the navy manual. So, if I may, I'll quote John Paul Jones, and when I do, forget all the men in the navy who don't qualify. If you will take the word "mariner" and substitute the word "instructor," and take the word "subordinate" and substitute "student" or "colleague," you will see what I mean, I hope,

about this particular section of our professional responsibility. Now this is John Paul Jones, not Mr. Curry.

> It is by no means enough that an officer of the Navy should be a capable mariner (instructor). He must be that, of course, but also a great deal more. He should be, as well, a gentleman of liberal education, refined manner, punctilious courtesy, and the nicest sense of personal honor.
>
> He should be the soul of tact, patience, justice, firmness, and charity. No meritorious act of a subordinate (student or colleague) should escape his attention or be left to pass without its reward, even though the reward be only one word of approval. Conversely, he should not be blind to a single fault in any subordinate, though at the same time he should be quick and unfailing to distinguish error from malice, thoughtlessness from incompetency, and well meant shortcomings from heedless or stupid blunder. As he should be universal and impartial in his rewards and approval of merit, so he should be judicial and unbending in his punishment and reproof of misconduct.

I think you can be a professional teacher in your attitude toward boys and girls if you follow the navy manual.

Then, we don't live just in our classroom; we are out in the school itself. If your only job, professionally, is to teach subject matter to boys and girls, you could be a private tutor, but you're in a school system. We are in a school system, and we're very much aware of it on occasion. Now when you come to the Evanston Township High School you are in an unusually good school system. When the student body officers and president hold up their hands and promise to "uphold the traditions which have brought honor to my school," they are taking an obligation that every one of us should take. You didn't make this school, and neither did I. You have come, as I came, to a school that was built on tradition. We start with this tradition, which is so wonderful to build upon; we start with this advantage. The fires out here in the fireplaces at Christmastime; the althletic sweaters which they wear on Fridays; the fight to get rid of sororities and fraternities; all the people who have won the Cunningham award; boys like Coleman Brown, John Ferren; the year we worked on the I.O.B.E.'s; lobby teas; all the honors that have come to this faculty —books published, national recognition in professional organizations; the New School; EPC; the respect of the School Board in this community; the table reserved for men only; the interest of parents who leave their jobs in the daytime to come to school to check on their pupils; the faculty breakfast. When you come to this school, you don't come to a school that was newly organized just before you arrived; every one of us has back of him all of these traditions that make our job so much easier than it would be if we had to start from scratch.

To the Administration

The second area where I think we have a professional responsibility in the school itself is to the administration. When I say "administration" I mean the School Board, the superintendent, the principal, the assistant principal, all of the people who are one notch above me I call the

administration—anybody who can say "No" to me is the administration. Now, what is my professional responsibility here? Well, I have known at least one for a long time, and I don't think any of them want us to be "Yes-Men." That's not the way you show your professional attitude toward the administration. No progress is made if there isn't disagreement and discussion. That's not the point. But you are professional when you are loyal to the decision once it's made, when you interpret the decision fairly. You can misinterpret a rule to students in such a way that, while you are keeping the letter of the law, you are not keeping the principle involved in the law. I can speak from experience in this regard, because I left a school once when I couldn't agree with the School Board. When I cannot agree in principle ("ple") with the administration, then I think it's time for me to go elsewhere. I can do that now; there are plenty of jobs available. I'm not saying I agree with everything that happens every day; I've had a few little knock-down, drag-out arguments myself. But when I can't agree with the philosophy that the School Board and the superintendent and the principal are following when they plan the program of the school, then I think I ought to go to some other school. I shouldn't stay there and give lip service to it and knock it in my actions. This is what I believe. I have practiced this is the past, and I shall leave this school when I cannot agree with the philosophy. That doesn't mean I agree with every rule. I can gripe better than anybody here, as some of you know.

To the Staff

Another phase of our professional responsibility has to do with our colleagues. I am older now and I was brought up differently, and this is the point where I fall short more than almost any of these others. It's so hard not to talk about other teachers in the hearing of pupils. If we can be very complimentary—all right, but how unprofessional it is when we let anything critical or negative be heard said by us; a student should never hear us say this. This I believe. Neither should we permit pupils to talk about teachers in our presence. We can always walk out and leave them if we don't have the authority to shut them up. I am of the old school that believes teachers should not call each other by their first names in front of students. There are other names we use, too, but we won't mention that.

Then I think if we're truly professional with our colleagues we must respect our differences. This school wouldn't be anything if every single person agreed, but if we are professional, we can discuss the differences in our beliefs, in our opinions, in our methods without discussing people, personalities—and then we can arrive at some of the solutions. It seems to me that the truly professional person cannot discuss these differences on the basis of individual people.

The next thing I believe needs no explanation at all. I don't think professional teachers gossip about each other. I love it, but I don't think professional people gossip about each other.

To School Spirit

Then the last thing is—I'm going to call it school spirit—I don't know what else to call it. I just think Evanston Township High School ought to be more than the place where we work. I don't think we ought to go to all of the games, but I think we ought to want to. You couldn't go to everything here even if you wanted to. But there ought to be a feeling within you, just the same as the students have, if you're a professional teacher. Not a private tutor off somewhere—you're in a public high school and this is the one we're in, and it seems to me we ought to have a feeling of pride in our school when things are right and shame when they're wrong. We're part of this school and our school spirit is just as contagious among the students as their own school spirit is contagious.

To a Democratic Society

Then if I were to take all of these and boil them down, I'd say the most important thing we have to do is not even in the classroom, or in the school. I think it was at our meeting on Saturday before we registered that Dr. Michael discussed the crisis in which we now are. Well, every year I've been teaching they've told me it was a crisis. I am willing to agree that it is, but there's a greater one right now. I think teachers have a responsibility in a democratic society that is not the sole responsibility of teachers of social studies. I am sometimes ashamed of people in my profession who know everything about the subject matter they teach and don't even know who's running for office; they don't think this is important. A few weeks ago there was a re-run on television of *This Is Your Life*, with Dr. Dooley, and as usual I was doing other things while the program was going on and missed most of it. I came to attention when they asked him this question: "With all of these troubles in Laos, and no hope whatsoever that you would have the equipment you need back there, where so many hundreds of thousands need your attention—and you can't possibly help them all—are you going back there to work?" And he answered just this: "Of course; I'm a doctor." And I think that should be our case. Do we have a responsibility in a democratic society? If we're teachers we do. We should be committed actively to responsible citizenship. If we believe that our democracy depends on an electorate that is informed and capable of thinking clearly, who's going to do this if we don't? Our attitude toward our government, toward politics, toward integrity in our public life—this attitude is contagious and boys and girls can get it. The people who run the government were once somebody's pupils. Sometimes this is hard to believe, but it is the case. Our attitude toward individual liberty, toward the trouble we take to be good citizens, active citizens—this is all part of what we teach.

My second personal example. A few times I get very tearful over my job as a teacher. I did one time recently, and that's the time I want to tell you about as a personal example to illustrate what I think about our responsibility in a democratic society. When I go to Washington to attend the board meetings of the National Defense Act, I am always awed by

the twelve people who sit on this advisory board. We are seated in alphabetical order. On one side of me sits Ralph Magill, editor of the *Atlantic Constitution*, Pulitzer Prize winner. When he holds up his hand to vote, I keep looking at that hand and I keep thinking of what he has written, what he's done about the problem of integration in the south, and all the honors that he has won and how wise he is. He votes by raising his hand. On the other side of me sits the Chancellor of the University of California, Glenn Seaborg, Nobel Prize winner in science, and I think of the work he did on the atomic bomb and of the mathematical computations his hand has made, and then when he raises his hand to vote, I look at it and think of all that. But when I hold up my ditto-carboned paw, representing the teaching profession, classroom teachers, the votes count one, one, one. And if you think the scientists or the politicians have any more responsibility than we do, I think you're mistaken.

Now I know right now what some of you are saying—I'm just sure of this—you are so conservative, Wanda, that you are reactionary—you're a sucker. They couldn't find anybody else who would say all this, and so you were chosen. Actually, this is all idealistic, but we live in an age when you know you've got to earn your salary and get out while the getting is good, but you don't have a family to support—and you could go on with a lot of things. You can say all this, and you probably will. Some of you will say, "Well, that happened years ago. Anybody who tries that now is only seeking a 'Northwest Passage.'" If you will remember (and I'm sure you don't, so I'm going to read it to you) the foreword which Kenneth Roberts put in his *Northwest Passage* says this: "On every side of us are men who hunt perpetually for their 'Northwest Passage,' too often sacrificing health, strength and life itself to the search. And who shall say that they are not happier in their vain but hopeful quest than wiser, duller folk, who sit at home, venturing nothing, and with sour laugh deriding seekers for that fabled thoroughfare?"

Let me tell you that there are still some of us who believe that teaching is a noble profession, that it demands that we set the example in this search for a better way of life, not just for ourselves, but for the world in which we live. Who shall sit in the scorner's seat and say that we, like the searchers for the "Northwest Passage," are not happier because our profession demands that we strive for these ideals?

Part II

Studies Completed in 1960

Closed-circuit television is one of many technological aids to instruction that make possible better utilization of staff and improved learning opportunities for students. Glenbrook High School, Northbrook, Illinois.

CHAPTER V

Arlington Heights, Illinois, Studies Curriculum and Testing, Instruction Assistants, Team Teaching, and Modern Technology in Fourteen Projects

H. L. SLICHENMYER

DURING the academic year of 1958-59, various members of our staff were engaged in fourteen research projects. We were quite gratified with the results of this research. Predicated upon the belief that one attempt at experimentation does not give a complete answer to a problem, we decided to continue the research in those areas where it was feasible and also to add one. (For a complete description of the research projects completed in 1959, the reader should consult the January 1960 edition of the NASSP BULLETIN.) The subsequent pages give a detailed description of the research completed during the academic year of 1959-1960.

RELATIONSHIP AND PREDICTABILITY OF OVER-ALL COLLEGE GRADE-POINT AVERAGE AND THE VERBAL AND MATHEMATICAL SCORES ON THE COLLEGE ENTRANCE EXAMINATION BOARD

This study was undertaken in order to determine what degree of relationship existed between the over-all college grade-point average and the scores of our students on the Verbal and Mathematics section of the College Boards. The group under consideration in this study were graduates of the class of 1959. The colleges which they attended represent a cross section of various colleges and/or universities throughout the nation. The college grades were those received at the end of the first grading period.

The statistical data derived from this study are presented in Table 1. The mean of the Verbal section of the CEEB was 465.90. The mean for the Mathematics section of the CEEB was 512.75. The mean GPA in (Grade-Point Average) in college was 3.29. The correlation for GPA and Verbal was +.55 and for GPA and Mathematics it was +.39. This, of course, is what one would expect in studying these two variables.

Since the Verbal section of the CEEB was the best predictor of academic success in college, the prediction of this success was computed on only this variable.

H. L. Slichenmyer is Superintendent of Schools, Township High-School District 214, Arlington Heights, Illinois.

TABLE 1

CEEB Variable	*Mean*	*College GPA Mean*	*r*
Verbal	465.90	3.29	+.55
Mathematics	512.75		+.39

Table 2 shows the predicted Verbal score necessary to obtain the subsequent letter grades in college. The letter grades were weighted 5, 4, 3, 2, 1 with "A" receiving the 5 and the others weighted accordingly. The predicted necessary Verbal score and the over-all GPA were as follows: (1) A, 599; (2) B, 521; (3) C, 443; (4) D, 364. Complete failure could be predicted for scores below 364.

TABLE 2

Over-all College GPA	*Predicted CEEB Score*
A	599
B	521
C	443
D	364
Failure	Below 364

The Effect of Physical Environment Upon Standardized Test Scores

In order to strengthen this experiment over the previous one in this area of research, we tested the sophomores in one high school in small groups and the sophomores at the other high school in one large group. During the junior testing program, the procedures were reversed in reference to the respective schools. This procedure gave both faculties an opportunity to experience both types of programs.

The control variables under consideration for the sophomores were: (1) total standard score on the *Science Research Associates High-School Placement Test*, (2) Over-all GPA. The experimental variable was the composite standard score on the *Iowa Tests of Educational Development*. Table 3 is concerned with these three variables. The "S" and "L" refer to small and large testing groups.

The difference in mean scores for the two groups on each control variable did not reach the .05 level of confidence. Therefore, it was concluded that neither academic achievement and aptitude on a standardized test nor GPA would affect the experimental variable. The difference in mean scores for the two groups on the experimental variable also failed to reach the .05 level of confidence. It appears, that for these two groups, physical environment does not affect standardized test scores.

TABLE 3

Variable	*Mean*	*σ*	*t*	*Sig.*
S.R.A. H.S. Placement	9.50—S	1.21	1.50	no
	8.90—L	2.65		
GPA	3.01—S	.87	1.11	no
	3.21—L	.90		
I.T.E.D.	17.04—S	4.69	1.00	no
	18.18—L			

The control variables under consideration for the juniors were: (1) Otis IQ, (2) over-all GPA. The experimental variable was the total raw score on the *Illinois Statewide High-School Test*. The results of these three variables are presented in Table 4.

The difference in mean scores for the two groups on each control variable failed to reach the .05 level of confidence. It was concluded that neither IQ nor GPA would affect the experimental variable.

The difference in mean scores for the two groups on the experimental variable also failed to reach the .05 level of confidence. It appears, that for these two groups also, that physical environment does not affect standardized test scores. The results obtained for the two classes mentioned above are parallel to those obtained last year.

TABLE 4

Variable	*Mean*	*σ*	*t*	*Sig.*
Otis I.Q.	107.93—L	12.12	.69	no
	109.22—S	10.50		
GPA	3.01—L	.73	.06	no
	3.02—S	.50		
Ill. Statewide	255.56—L	42.12	1.43	no
	267.48—S	33.70		

Relationship of Grades Earned in High-School Subjects to Over-all Academic Success in College the First Grade Period

A four-year study has been completed and the results studied statistically to determine which subject or subjects are the best predictors of college success. The data used in this study were grades made in high school and grades made in the first year of college by graduates of the

classes of 1956, 1957, 1958, and 1959 of Arlington High School. From the 307 graduates of the 1956 class, 181 enrolled in 72 different colleges; from the 311 graduates of the 1957 class, 156 enrolled in 73 different colleges; from the 411 graduates of the 1958 class, 242 enrolled in 80 different colleges; and from the 565 graduates of the 1959 class, 318 enrolled in 97 different colleges. The study included 124 students from the 1956 class, 136 from the 1957 class, 206 from the 1958 class, and 318 from the 1959 class, with complete data of college grades and high-school grades in the five different academic areas: foreign language, mathematics, English, science, and social studies. One general conclusion may be made from the study—the most consistent predictor appears to be over-all high-school GPA as compared to over-all college GPA.

TABLE 5

Variables	*"r" for Class of*			
	1956	*1957*	*1958*	*1959*
English IV and College English	.52			
English IV and College GPA	.49			
American History and College GPA	.30			
High-School English GPA and College GPA		.54	.56	.59
High-School Social Science and College GPA		.56	.55	.49
High-School Science GPA and College GPA		.49	.50	.57
High-School Math GPA and College GPA		.55	.51	.60
High-School Foreign Language GPA and College GPA		.46	.49	.42
High-School Over-all GPA and College GPA	.82	.35	.71	.66

Lay Personnel as Library Assistants

The success achieved by lay persons working as library assistants was rewarding to such a degree that the decision was made to continue this practice along with intensive in-service education. All phases of library work were investigated by the lay personnel under the constant help and supervision of the librarian in each of the respective high schools. There has been a marked increase in library proficiency on the part of the assistants. Students have accepted these people as a part of the regular school staff. The following suggestions are offered to schools establishing such a program:

1. Provide for intensive in-service education by setting aside certain time for conferences and directed reading.
2. One certificated librarian could educate several lay librarians by establishing "classes."
3. Provide a directed reading series outside of the school.
4. Establish a salary schedule for lay assistants.
5. Establish job specifications which would outline the duties and responsibilities entailed in this position.

Lay Personnel as Study Hall Supervisors

We have completed the second year of experimentation with lay personnel as study-hall supervisors. There are still no observable differences between the study halls conducted by lay supervisors and those conducted by professional personnel. At Arlington High School two regular study-hall periods and a detention study hall are under the supervision of a lay person. At Prospect High School six regular study halls plus a detention study hall are supervised by a lay person. Since, in addition to a saving in professional time and a saving in money of $6,250, the students in the study halls are studying under conditions which are as good as those in professionally staffed study halls, we feel that this experiment is worthy of permanent status in our district.

Combining the Teaching of Latin II and English II

The experimental study has demonstrated the following observations that resulted in the back-to-back presentation of English II and Latin II:

1. There must be continued linguistic analyses for the effective teaching of languages that can be used. These linguistic analyses should embrace grammar, etymology, phonology, semantics, and proprietary, critical observations.

2. Instructional improvement was observed in grammatical areas that involved paraphrasing, outlining, and the writing of the precis by the heavy emphasis of the study of the primitive root forms. Hence, that part of the experimental study that stressed linguistic word study could serve as a more decisive aid for reading and analyzing passages in history, science, and literature.

3. As a result of this philological approach to English, a marked improvement in the spelling skills of those students with serious spelling disabilities was evident.

4. More active and serviceable units were obtained by some of the experimental techniques which were employed. This was manifestly apparent in the presentation of various language skills which were identified, maintained, and re-established with a reinterpretative system of habitual vocal responses to the fused elements of English and Latin.

5. The speech training which was used in some of the experimental innovations revealed that, in those speech units that related closely and continuously to the everyday needs of the student, there was the more significant gain.

6. It is very difficult to recommend specific plans for adapting some of the observations which the Experimental Study proved in the application of speech work to the coalescence of English and Latin due to the varying conditions under which high-school speech work is organized. However, it was found in the semester general course for sophomores on a two-year basis of having utilized various experimental speech approaches that the following best promoted their curricular speech needs: conversation, storytelling, extempore dramatics, discussion, and tests of good speech.

7. The Experimental Study also brought out that specialized speech projects, such as extempore dramatics and interpretative reading, should be used in the beginning only as motivating devices, not as ends in themselves.

8. Maximum progress in speech arose only through the focusing of conscious attention directly on the technical aspects of speaking. It would follow that relatively less progress would ensue by trusting that speech skills will grow naturally as by-products of other school disciplines.

9. With its decided emphasis on culturally enriching areas in the classical humanities, the Experimental Study should prove a profitable curricular vehicle for fast and accelerated students.

Foreign Language Laboratory

The language laboratory at Arlington High School is the result of a combination of a core of modern language teachers representing a combined eighteen years of fruitful experimenting with aural-oral-visual techniques, and the NDEA providing the funds. The instructors had spent some years in experimenting with various phases of audio-visual techniques and electronic equipment, ranging from a simple mail-order victrola to various types of more complicated machines, plus slides and filmstrips.

During the school year 1958-59, our mobile laboratory was born—the fruit of the combined thinking of the language staff with the aid and advice of our visual-aids director. Except for the harassment of a tempermental tape recorder, the mobile audio laboratory worked quite well. One serious drawback developed almost immediately: one such unit is inadequate to service an entire department where the enrollment exceeds 800. Another disadvantage was the fact that optimum listening conditions are not obtainable while a part of the class is reciting and the other listening.

This experimenting led to the laboratory idea. The mobile laboratory was placed in a room which at that time did not have full, daily use. One instructor was granted some released time and he in turn operated the equipment, proctored the "lab," and gave help to students who had questions about the material in their "sound" assignments. The students were sent to the "lab" on a pass either from study hall or class, or they came in after school.

At the beginning of the school year 1959-60, the modern language laboratory of 35 student positions was installed and put into use almost from the very beginning. Because the student enrollment was too great, it was difficult to schedule a student's time in the "lab" often enough—and the Latin students had to be occluded. The first plan was to have each pupil attend a laboratory period of from 15 to 18 minutes each period his class met. However, certain periods of the day this goal was unattainable because of excessive concentration of language classes at these times.

The program began with the instructors adapting and putting on magnetic tape materials from the text. This had certain drawbacks, for some of the texts, based on a reading approach to the language, did not adapt too well. This system resulted also in much time being spent by teachers in preparing tapes for their classes.

The Spanish teachers had a definite advantage in this since their text was accompanied by some professionally prepared discs which gave them direction and impetus toward a pattern of development. In 1960-61 the German classes are adopting a new text completely synchronized with a commercially prepared tape.

Nevertheless, for all the aches and pains, we all feel that considerable progress has been made. Again, we feel that:

1. Students had a quicker command of common useful expressions and retained them longer
2. Students sooner became used to native speed of articulation
3. Pronunciation improved markedly
4. Comprehension of new material was quicker
5. Readiness to respond in the new language was quicker—and more correct
6. With commercial materials, the students were able to hear and understand "real natives."

With a few exceptions the students enjoy the laboratory work. As a whole, the juniors and seniors can work profitably in the "lab" without supervision. Freshmen and sophomores seem to need teacher supervision —"someone to grade them" in their laboratory efforts. And last, freshmen and sophomore boys cannot be trusted unsupervised in the laboratory. Because of this latter problem the "lab" time is now so scheduled that each class goes in with its teacher—whereas formerly each youngster went in for a portion of each period in which he had class. We feel that the time now allotted each youngster in the "lab" is not at its optimum, but, after all, the machine does have to be preserved.

The teachers are generally either enthusiastic or vitally interested. All seem to think the quality of their product significantly upgraded. Future plans are to build up our tape and record library and to adopt texts with synchronized tapes as soon as possible.

Use of Teacher Aides in Teaching Remedial Mathematics

At the beginning of the year, two remedial classes of approximately 20 students each were established. In one class (hereafter referred to as the first class), two teacher aides were regularly scheduled every day. In the other (the second class), two teacher aides reported only on Tuesday and Thursday. The first class was divided into two major groups and one smaller group. The two larger groups were each assigned to one of the teacher aides and the other worked on their own under the direction of the classroom teacher. In the second class each student worked on his own, and the part-time aides assisted in correcting their papers and helping them with individual problems. At the end of the first quarter

more than half of the first class and about half of the second were transferred from the remedial to slow classes—the next higher level—as a result of their progress. At the end of the first semester, it was decided to consolidate the two classes so the students in the second class were moved into the first. At the same time one of the aides decided that his own studies were suffering because of the lack of a study hall and dropped out of the program. The only replacement available was able to help only three days a week. This resulted in a complete reorganization of the program. A majority of the students were assigned to the full-time aide with the remainder working under the classroom teacher with the assistance of the part-time aide.

The use of teacher aides to direct the activities of small groups worked very satisfactorily. Having each teacher aide keep his group for an entire semester was better than last year's arrangement of rotating the groups frequently.

The combining of the two classes at the end of the first semester created many problems with some of the students. The loss of one of the teacher aides added to the problem also since the students who had been working with him were either reassigned to the other aide or were asked to work on their own.

More teacher aides should be available so that the number of students assigned to each aide may be kept small, probably a maximum of 5 with 3 as an ideal number. The aides would then have an opportunity to become better acquainted with the members of his group and not become too involved with correcting papers. This last was the major objection to the program by the aides and was the reason why one aide had to drop the program.

The S.R.A. *High-School Placement Test* was given on June 9 to determine the change in grade placement scores in mathematics. The same test had been given to the students during February of the preceding year to determine placement of the students in the high school.

On this test the lowest possible score is 3.5. The change in grade placement scores are given in the tables below.

	Students who were in										
	first class during both semesters					*second class during first semester*					
Student	1	2	3	4	5	1	2	3	4	5	6	7
8th grade	3.5	5.9	5.2	5.8	3.7	4.3	4.6	5.4	4.3	5.4	5.4	5.4
Present	3.5	6.1	6.1	6.6	8.2	5.0	5.5	5.7	6.3	6.6	7.6	7.8
Change	0	0.2	0.9	0.8	4.5	0.7	0.9	0.3	2.0	1.2	2.2	2.4

Although the above results do not indicate any difference in learning under the experimental setup, the teacher felt that the students gained a great deal during the year. In previous years it was believed that little

had been accomplished during the course. This has not been true under this project. Most of the faculty seems to favor the project. The teacher's own personal feelings are that this has been a most worth-while project.

Conclusions Based Upon Two Years of Experimentation

1. The fusion of English and a foreign language is feasible.
2. The best predictor of college success is GPA in high school.
3. Foreign language laboratories result in enriched experiences for students.
4. The team approach is an effective teaching method.
5. Follow-up studies are valuable in evaluating the total school program.
6. Physical environment has little effect on group test scores.
7. Students can be used effectively as aides in the classroom.
8. Lay personnel can be used effectively in library and study-hall situations.
9. Ability grouping can be predicted.
10. Sophomores in an accelerated physical science program achieve academic knowledge comparable to juniors and seniors enrolled in average sections of chemistry and physics.
11. Research is a necessary facet of today's public school.

Superintendent N. E. Watson of Glenbrook High School meets regularly with interne teachers to facilitate their orientation into the school.

Glenbrook High School has experimented with several kinds of foreign language laboratories.

CHAPTER VI

Glenbrook High School, Northbrook, Illinois, Projects on Internship, Large Classes, Team Teaching, Teacher Aides, and Language Laboratory

N. E. Watson

As WE close the second year of our various experiments at Glenbrook High School under the Utilization of Staff program, we find in total a considerable amount of progress has been made although many problems have been discovered. This article will tell briefly the results of our experiments, the activities which have been conducted, and the progress we feel has been made.

One of the outstanding results of the entire group of experiments, we feel, is the fact that into our second high-school building, which is now being planned, are going many of the ideas which have come from the Utilization of Staff program, and the problems which we have encountered as we conducted the projects. The new building, which is to be a "school within a school" concept, but in a compact all air-conditioned building, could not have come into being without at least some of the knowledge we have accumulated through our projects.

The activities within this program have been five in number: the internship for new beginning teachers; large classes; team teaching; the use of teacher aides; and the development of the electronic laboratory for the teaching of foreign languages.

Large Classes

The use of the large classes and, with such usage, the use of teacher teams probably have met with more opposition and more problems than any of the projects. There are real reasons for this, however. We are definitely committed to the idea of developing large classes to be taught by teacher teams, but our present problem is one of space. The present building, although only seven years old, does not have a sufficient number of large spaces in which to conduct classes for even one hundred students. Some comment will be made in the closing paragraph of this article regarding some of our ideas for the new building.

N. E. Watson is Superintendent of Glenbrook High School, Northbrook, Illinois.

In order to meet the needs of a rapidly growing school, it is necessary to have a certain number of individual classes in various subjects. Therefore, it is not always possible to develop large classes even though we wish them. We have also found that such large spaces as we have been able to use have not always been best suited to the larger group. Where we have attempted to install public address systems, there has been a sufficient amount of feed-back and noise that has annoyed rather than helped. We have found teachers not too adaptable in some instances to the new types of equipment necessary for the large classes and, in some instances, this has required definite re-training. A certain amount of automation and flexibility to use or at least try out new equipment is needed in the development of these teacher teams and the teaching of larger groups.

Team teaching is not always popular with some teachers. Many of them are individualists and do not work well with other teachers. To develop a truly excellent teacher team requires flexibility and certainly a real leader who is a team leader. This has not always been possible although we have had a fair amount of success here. The problem of responsibility within the team for certain areas of work is sometimes a source of annoyance. This again must be referred to the leader of the team who must have considerable leadership ability, be very tactful and fair, and possess a tremendous knowledge of the characteristics of people, especially the people within the team.

Team Teaching

Team teaching, we believe, will become an absolute necessity in the future. To become successful, however, space with proper acoustical facilities, teams that are well balanced and coordinated, a variety of abilities, a constant application to the goal inherent in team teaching—all of these are essential to the development of the excellent teaching team. If a teaching team could be composed of a master teacher, a teacher of some experience, a beginner, and an aide, we might be able to develop an excellent team. This is not always possible, but we feel that the team must be well balanced or it is not successful.

Teacher Aides

Everyone wants a teacher's aide. We have used teacher aides at Glenbrook during the past two years and are continuing to use them. We find we must be exceedingly careful in their assignments however. We find that every department wants an aide and, in some situations, teachers feel that they are slighted if someone else gets an aide that they might have had. Is the teacher aide truly a contribution to the better utilization of staff or is it an addition that might be called a luxury or convenience which costs more money? Is not the utilization of staff a plan to secure better usage of teachers available and possibly even to save some money in so doing? These are the questions we have tried to face as we have developed this program. In some instances we actually have saved

teachers from much routine and unnecessary hardship; in other instances this can very easily become merely an additional number of persons to be added to an already expensive budget, and actually no one is doing a better job than he would have done without the aide. This is not a condemnation of all teachers; it is merely pointed out as a possible weakness of this kind of practice. This requires a considerable amount of astuteness on the part of the administration and supervisors, especially department chairmen. The teacher aide is an extremely valuable asset to any school system and can be used in considerable numbers, but it must be carefully understood that it is not merely an addition to a budget, but is serving a real purpose to get a better job done for the boys and girls in this system. Board members do not look kindly upon the addition of staff members unless they can see real reason and purpose for such additions.

The Language Laboratory

Our language laboratory has been outstandingly successful. Begun with the assistance of a grant from this program, it has had a considerable amount of money added through the Board of Education and NDEA. Next year there will be thirty units in the laboratory in addition to the console. We believe that we were right in starting this laboratory in a very simple manner. We started it with four booths, and teachers gave their services from free periods to supervise the laboratory. Students came into the laboratory on their study periods. This provided an opportunity to have the idea sold gradually to students and teachers. We have found great difficulty finding teachers sufficiently trained in the oral-aural method to be of any assistance to us. We believe that to start with an expensive laboratory is difficult unless one does have the teaching staff. It is a very expensive installation and if you do not have someone who knows how to make use of it, then the equipment may lie idle and might very well be a very poor investment. At Glenbrook we feel that having gone from a very simple basis to a completed laboratory has been very wise on our part. It apparently was circulated about the middle-west that Glenbrook had one of the language laboratories and immediately we were beseiged by literally hundreds of visitors. Now, of course, there are many more laboratories and the interest in our particular laboratory has died out. We believe that this electronic installation has tremendous advantage to the teaching of a foreign language and Glenbrook has further strengthened its program by the addition of Russian in September 1960. This makes possible four years of French, German, Spanish, and Latin, and eventually such courses in Russian as will be demanded by our students.

There are problems, however, in the use of the language laboratory. As has been stated previously, it is difficult to find teachers, and it also means that to supervise the laboratory properly when actual classes are not being held there requires additional service. It was at first thought that teachers could do this on an extra basis, perhaps using free periods

or such periods that could be assigned to them. We now find great need for a teacher's aide in the laboratory, or a sufficient amount of time assigned to the teaching load so that work in the laboratory can be considered a part of that load. This again adds to the total cost, and we find some problems involved here. Our teachers have been most interested and gracious in giving their services, but we can foresee a problem of additional service because of the laboratory. The improvement in teaching, however, and in the learning product, we feel, is so great that we are on the right track.

Internship Program

The internship has been outstandingly successful and will be continued indefinitely. With the coming of the second and possibly even the third high school in this township high-school district, we can foresee great need for the internship program. With the necessity for briefing and orienting at least 25 to 30 new teachers, some of whom are inexperienced and some experienced, we find the internship of great value. In every instance the evaluation of the young teachers in the program has been very good. Last year there were nine in the program, this year six, and next year, when we shall be on our own financially, there will be eight. These young people have been selected from well over the entire nation, all from the upper limits of their graduating classes. We are injecting into an excellent faculty additional excellent people. We have tried to balance the interns in terms of subject matter. This year, for instance, they have represented the fields of English, industrial arts, journalism, music, and girls' physical education.

Group discussions have been held daily except toward the latter part of the year. During the latter part of the year, we have eased this somewhat because of the heavy load of completion of the year's duties. The subjects discussed have been broad and varied. We have kept the program very flexible and have deliberately not structured it tightly during the two years of experiment. Beginning this year, a somewhat tighter structure was undertaken because of our experience during the past two years. We have not only discussed the philosophy of the school and the community, but also almost every phase of the school's operation. This has given young beginning teachers an opportunity to ask any questions that came to their minds. Very often the planned day has been changed because a young teacher had a question which appeared to be urgent. This often started a discussion which might go on for two or three days. But in so doing, we answered their questions. All supervisors, all administrators, all department chairmen have been brought in for at least one or two periods with the interns. Each intern has been told that this is his program. The topics and problems to be discussed have been decided very largely by the interns.

This is our reason for a somewhat flexible structure, because we wanted to be certain that we were serving these young people. We make it quite clear at the very beginning of the program that nothing said by an

intern during these discussions will have any bearing whatever on his contract or salary for the coming year. This is his program—a program in which he may say what he wishes, he may discuss what he wishes, he may get as many things "off his chest" as he desires, and he may ask the questions "at the summit" as it has been called by interns. This has apparently been one of the reasons for the success of the program. The young teachers feel that they have here an opportunity to ask the chief administrator what they often wish to ask, but hesitate to do so in many of the strictly structured meetings which are provided apparently for this purpose, but never seem to serve well this purpose.

No teacher comes into a new system these days with so much complication in education without being "at sea" to a certain extent. What is the grading system? What is the counseling system? What is the philosophy of the administration? How do you request this? When do you get your check? Is there a credit union? This goes on and on—the questions come to the teacher whether experienced or inexperienced. It is true that the young teacher has had student teaching, but during the student teaching he gets into one field of activity usually. The practicing student is supervised by one department and by his university, but no matter how much the administration tries, it appears never possible to get these young people into a very broad contact with the system. The student teacher, of course, is in the school for a very short period of time and does not have enough time to make all of the contacts in a large school or a large school system. Very few are in contact with the parents and the various other departments. In our internship at Glenbrook, all beginning teachers come to our internship program. Every teacher in this program during the two years we have experienced it has been very high in his or her praise of the results.

There are, of course, some criticisms. The interns have felt occasionally that certain department heads and supervisors did not appear to come sufficiently prepared to conduct a discussion with the group. Perhaps the questions were not anticipated. Perhaps we can now structure this better than we did in the beginning. Perhaps we can prepare and brief the department chairmen and the various supervisors who go before the interns so that they do a better job of presenting their work to these young teachers.

We find that a certain amount of broad visitation over the system outside of the teacher's own department has been of tremendous value, and we have allowed some of this. We have not done a sufficient amount of discussion, however, following such visits and following the visits of department chairmen. We have done a certain amount of testing of attitudes, but we have perhaps not done the best job we could do regarding the report back to the interns of these tests. We feel that we must do a more closely correlated job this year in this area.

Some of the suggestions made by the interns for those of following years are these: Let us meet with the interns of the previous year. Keep the program flexible so that it will still be possible to discuss the problems

the interns encounter in their teaching positions from day to day. Have more visitation in all departments by interns plus sessions devoted to discussion on what they have observed in each class and each department. Increase the discussion of disciplinary problems current in the school. Show how these problems are handled, where the role of the counselor ends and that of the disciplinarian begins. When do students rate expulsion and when can or should the parents come to the student's defense? Have more discussion of advisories and the function of the advisory system. Plan an intern social gathering at the beginning of the school rather than at the end of the school year. (Thus far, at the end of each school year we have taken the interns and their husbands and wives to a restaurant outside of the building just for a social evening.)

They want the new teacher to be evaluated sooner and show him these suggestions for improvement a little earlier than we have been doing. Thus far, it has been closer to contractual time than perhaps it should be. The interns wish to be shown more of the physical plant than we have attempted to do. Thus far, we have avoided any possibility that the internship program be only a "how do you find your way around the building" kind of program. Perhaps in our effort to avoid this, we have overlooked the need for doing more of it than we have been doing. This will be corrected this year. There should be more specific explanation of school procedures in order to facilitate the new teacher's first few days in class. We have two full days this year of workshop with our new teachers, and we believe that we can do a better job than we have been doing, although we have devoted one entire day to the new teachers thus far.

As was said earlier, we are now going to use some of our ideas developed during this program in our new building. We are going to attempt to provide enough large spaces as well as some very small spaces, but we are going to do this by means of flexible walls, and we are experimenting and studying the various types of flexible walls. We are going to segment our auditorium so that the auditorium may be cut up into large classrooms which will also provide for classes of 100 to 150 students. Language laboratories will be developed in the new building. The internship will be continued on a district wide basis. Aides will be continued. Teacher teams will be developed as we plan the new school and bring many new teachers together. Thus we see the contribution of the Utilization of Staff program to the district which Glenbrook High School serves. We look forward with great interest to the many innovations which will come in our new buildings and have already been made possible in our present plant.

CHAPTER VII

Jefferson County, Colorado, Completes Three-Year Study of Staffing, Changing Class Size, Programming, and Scheduling

ROBERT H. JOHNSON
M. DELBERT LOBB

STATEMENT OF THE PROBLEM

THERE is an ever present need for improvement in the quality of education. This requires continuous examination of the methods and techniques of instruction used in the schools of America. Major obstacles in attaining the most effective use of the skills and talents of teachers in secondary schools have been the stumbling blocks caused by the rigidity of ideas about school staffing, class size, and programming and scheduling. Over the years a pattern of planning has developed which has required that teachers meet with a limited number of students at a specific time, day after day. Two overriding aims have been to restrict teacher load to a reasonable level and to routinize, and consequently lighten, the task of organization. The intent and results have produced certain advantages.

However, even though some problems have been avoided or lessened, serious difficulties have developed from the unthoughtful adherence to comfortable concepts and practices in making school schedules, setting the size of classes, and programming for instructional excellence. Some of these deficiencies are: poor investment of time because of lack of attention to the adjustment of the size of groups to the type of activities; the curtailing of educational opportunities for students by arbitrary limits of space, time, and teacher talent; the stifling of the initiative and creative performance of teachers caused by undue regimentation imposed by a "five-by-five" schedule; the failure to place sufficient individual responsibility for self-improvement upon pupils; the construction of school buildings designed in terms of the concept of classes of 25 to 35, and the resulting restriction of innovation in school practices; and the sacrifice of flexibility in order to achieve stability in educational planning.

The typical secondary-school schedule today shows careful planning and hard work. Most principals have become quite adept at setting up a device with which pupils and teachers can be manipulated in and out of

Robert H. Johnson is Superintendent of Schools and M. Delbert Lobb is Director of Research, Jefferson County Schools, District R-1, Lakewood, Colorado.

learning situations. It has generally been accomplished with the feeling that only a certain number of pupils could be assigned to a particular teacher at a definite time in a designated place. While this has been the easy way to keep teacher load under control, unfortunately it has also limited the instructional program. The real problem is that this typical schedule will not do the job required of it in implementing an educational program which meets the needs of today, not to mention those of the future.

In spite of efforts to utilize departmental planning, a large share of the contribution made by individual teachers has remained isolated. Although much of the educational process necessarily rests with the teacher working as an independent agent, a great loss is suffered by students if there is no attempt to secure a *commitment* of teachers to the utilization of the ideas and talents of fellow workers.

With a view to these problems and under the pressures of coping with increasing enrollments, need for classroom space, and recruitment of qualified teachers, Jefferson County, Colorado, School District R-1 embarked on a program of experimental research in 1957. This was done with the support of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School, appointed by the National Association of Secondary-School Principals. The study was subsidized in part by the Ford Foundation's Fund for the Advancement of Education.

Purpose and Setting

The general purpose of the study was to investigate promising ways of improving instruction and utilizing the staff in the secondary schools. The first phase was designed to determine the effects of class size upon achievement and attitudes of learners. During the second phase, emphasis was placed upon the relationship of team teaching and schedule modification to the educational progress of students. The third phase was an extension of the second in breadth and depth. New kinds of teams and more drastically modified schedules were studied.

During the three years some of the related factors and problems examined were: identification of areas of proficiency of teachers; analysis of appropriate activities for various-sized groups of students; discovery and use of outstanding techniques; description of teaching functions and their relation to classification and remuneration; extensive analysis of individual students; increased teacher-pupil contact; close scrutiny of the curriculum; development of techniques of self-evaluation by students; and encouragement of active research by teachers.

Research can be carried out successfully only if the setting is one which fosters experimentation. The school system must be receptive to change and mobility. Professional leadership has to encourage adaptation and the community must provide a situation conducive to such activity. Jefferson County, Colorado, School District R-1 furnishes a locale which is well suited to the requirements of scientific study. Under the guidance of the superintendent, experimentation has become an integral part of

the educational program. This is evidenced by the budgeting of money specifically for this purpose. The community participates in activities of the schools and supports them in the continual effort to increase efficiency and quality.

This school district was organized in 1950 by popular vote of the electorate. All 39 independent school districts were consolidated into one school organization. It was the first school district to be formed under a new state law. The area lies just west of Denver. The eastern portion of its 791 square miles is comparatively flat; the western portion, mountainous. With regard to pupil population, this is the second largest school district in the state. At the time of reorganization, there were about 10,000 students. Ten years later there were almost 30,000. It is estimated that in 1970 the enrollment will be over 60,000 students. Due to the fact that the school is one of the few commonly shared organized units in the county, it assumes additional importance in the total community life. These and other factors cause this school district not only to accept, but also to demand, research and progress.

In considering experimental work, the personnel of the schools believed that staff utilization in the secondary schools could become more efficient through increasing professional time applicable to learning situations and that it was economically feasible to do this. Through careful preparation and communication, it was possible to secure an experimental atmosphere, community understanding, and financial support. Thus, the eight high schools in Jefferson County provided a setting favorable to research in terms of the attitude of the community and the vitality of the school district. The three phases of the project are presented in some detail in the following sections.

Various designations have been used for personnel and other features of the projects. For clarification, following are definitions of some of the terms:

A *teaching team* is a group of two or more persons assigned to the same students at the same time for instructional purposes in a particular subject or combination of subjects.

Schedule modification is any change in the time-table for the day or week which alters the usual procedure of having the group meet daily at the same time with the same teacher and room.

A *class* is a group of students assigned to a particular teacher or teaching team for a particular subject.

A *paraprofessional* or *teacher assistant* is an uncertificated person with or without a baccalaureate degree but with some skill in typewriting and a background of courses in the school subject.

A *clerk* is an uncertificated person who is stenographically skilled.

First Phase—Class Size

In beginning the investigation, this school district designed a research study with the purpose of determining the effects of numbers of learners upon the achievement, attitudes, and behavior of the learners. This first

phase came to be known as the Class Size Study. It was planned during the spring of 1957 by administrative personnel of Jefferson County Public Schools with the support of J. Lloyd Trump and the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. During the summer, committees of experienced teachers constructed curriculum guides and current-status tests to be used at the completion of teaching units throughout the year. The study took place during the school year 1957-58. The following specific hypotheses were tested:

1. A group of 20 students with one teacher achieves better results than a comparable group of 35 students with one teacher.
2. A class of 70 students taught by two teachers working as a team shows better results than one of 70 students taught by two teachers in two separate classes of 35 each.
3. A class of 70 students taught by two teachers working as a team achieves better results than a class of 20 taught by one teacher.
4. A team of two teachers produces better results in a class of 70 than a team consisting of one teacher and one paraprofessional or clerk.
5. Classes of various sizes will produce better results in certain subjects than in others.
6. A group of ten superior students with one teacher will accomplish more than a group of students in a class of 20, 35, 60, or 70 students.
7. Morale of teachers working as a team with a larger group of students is higher than the morale of teachers working individually with average-sized groups.
8. Two teachers working as a team can identify their areas of proficiency to the benefit of the educational groups.
9. The class-size experiment can produce or refine instructional techniques to the benefit of the total instructional program.

Selected for study the first year were classes in English III, Plane Geometry, American History, and Biology, in the eight senior high schools in Jefferson County. Classes of 10, 20, 35, 60, and 70 were organized in those subject areas. To limit teacher load, two persons were assigned to the groups of 60 and 70. A total of 1,075 pupils in the tenth and eleventh grades were included. With two exceptions, the larger classes were assigned to certificated teachers. The first exception was a team composed of a certificated teacher and a clerk assistant who had a large class of eleventh-grade pupils in American History. The other exception was a combination of a certificated teacher and an uncertificated assistant with a college degree; they were assigned to a group of pupils in English III. Of the 35 teachers involved in the study, 26 entered the activity on a volunteer basis. All groups of pupils, except those of ten, were randomly selected. Pupils in the groups of ten were chosen by the deans and principals as those most likely to profit from small group instruction. They were selected on the basis of intelligence, achievement, and teacher judgment. Consultant and resource services were made available to the teachers; these were members of the staffs of the University of Denver and Jefferson County Public Schools. Their contacts and contributions were made in visitations, workshops, conferences, and regular meetings.

In order to establish the control which is necessary in an experiment, tests of educational development were administered to all pupils enrolled in grades 10 and 11, and tests of mental ability were given to establish the nature of the experimental groups. The achievement tests were given at the beginning and end of the year, and the results obtained were treated statistically.

Each teacher was requested to submit a weekly report of class activities. The activities described were classified as persistently traditional, occasionally traditional, or persistently experimental. Persistently traditional implied that the teacher used no new practices; occasionally traditional meant that the teacher now and then tried new techniques, but reverted to proved practices; and persistently experimental indicated that the teacher tried different techniques and followed up and refined satisfactory practices.

As a result of this study, it was determined that the size of class did not in itself make any significant difference. Specifically, the experiment produced these findings; first, there were no significant differences in the achievement of pupils in classes of 20, 30, 60, and 70; second, small groups of high capacity learners were not academically or economically feasible; and further, students had not been harmed by participating in large group work. Observations of the situations where two persons were assigned to large groups indicated that team teaching had possibilities. An incidental ramification of the investigation was an idea for a pattern designed to break out of the traditional, rigid high-school schedule. These findings led to the continuation and extension of the study during the following year, with the hope of releasing teachers from unnecessary repetition of instructional material, providing more time for planning, and making available more opportunities for individual pupil assistance.

Second Phase—Team Teaching and Schedule Modification

In the spring of 1958, when tentative results of the first year's study were being considered, a follow-up experimental program was developed, to start in September 1958. The intention was to explore further the conclusions reached in the first project and at the same time to investigate new ideas. In the summer of 1958 a work session was held for the purpose of providing orientation for the people in the project. Participants were acquainted with the design, ideas to be tested, and proposed procedures. The responsibilities of various persons were outlined and the relationship of the research to the over-all school program was described. Also, teachers made general preparations for the ensuing year and specific plans for the first weeks of school.

The underlying purpose of the investigation during the school year 1958-59 was to determine the effects of team teaching and schedule modification on the educational progress of students in the secondary schools. A close look was taken at the possibilities of adjustment in the organization of classes and the utilization of teachers. The primary purposes of team teaching were to capitalize on the various talents of teachers,

use their time better, adapt the size of groups to functions, utilize teaching space more adequately, and identify any other advantages which might appear. The idea behind schedule modification was to provide the correct amount of time for each phase of the subject at the time needed without taking any of the total class time from pupils in that subject. The assumption was that traditional scheduling patterns did not provide for the best use of time available or the best application of the unique capabilities of the staff. This design also included elements of team teaching.

Several assumptions formed the foundation for the second year's study. They were based upon general consensus and information about the function of the modern secondary school in a changing society.

1. Schools must continually meet new educational needs created by changes in our society.
2. Experimental research must be conducted in order to improve instructional programs sufficiently and rapidly.
3. Increased efficiency in the utilization of the staff is a direct route to better educational opportunities in the secondary schools.
4. Educational development of students is a valid measure of the effectiveness of the staff.
5. Attitudes of teachers and learners are an important factor in the instructional process.

With these concepts as a basis, the following hypotheses were proposed and tested during the second year:

1. Teaching teams produce better results in the educational development of pupils than teachers working individually with regular classes.
2. Better results in pupils' educational development are produced with a schedule which is modified for more efficient utilization of staff than with a regular schedule.
3. It is economically feasible to use team teaching and schedule modification in secondary schools.
4. The opportunities for varied pertinent learning experiences are provided better in situations using team teaching and schedule modification than in regular classes.

Team Teaching

Included in this approach were approximately 1,500 students and 18 teachers in the subject areas of social studies, business education, English, and mathematics. In general, the procedure was to analyze the needs of the students at frequent intervals, and then apply the competencies of the teaching team to those needs with continual evaluation of progress. There were opportunities for having large groups, small groups, individual contacts, and independent study. A satisfactory pupil-teacher ratio was maintained in every case. In addition to the teachers, a clerk or paraprofessional was provided for each team in order to accomplish the work associated with the project.

In team teaching there was no adjustment to the schedule except the necessity for scheduling all members of the team at the proper time for classes and planning. Teachers were also assigned to other classes, but

their total loads were normal. Following are descriptions of the specific patterns which were organized for study:

School A—Social Studies. At this school the professional in charge and a paraprofessional had one class of 57 American History students and two classes of World History with 67 and 82 students. These groups met every day in a cafeteria which was equipped with a public address system, and used the remainder of the day for preparation, research, and meetings of small groups.

School B—Business Education. This team consisted of a professional in charge, a professional, and a clerk. The teachers both had other assignments in addition to the experimental classes. As a team they had three Typing I classes of over 75 students. The classroom was actually two regular classrooms with a dividing wall, remodeled to contain a vision strip which permitted the teacher to view the entire area. A sound system was installed with microphones and speakers in both rooms. The tape recorder was an important factor in the instructional process.

School C—English. This team had four members. Their responsibilities within the research project were for one class of 110 students in English II and one class of 87 students in English III. The facilities available to these two groups were two regular classrooms and one double-sized room which was large enough for the whole class. This large room also had an accordian-style divider which permitted its use for two groups when necessary. The overhead projector and other equipment were important factors in teaching. Much was done with grouping of various types, including the use of some of the paraprofessional's time for work with a small group of students in remedial reading.

School D—Social Studies. Three persons made up this team which was assigned one experimental class of 85 World History pupils and one of 56 American History pupils. They used a cafeteria for large groups and had another classroom available when needed. Considerable use was made of the library also. All the persons on this team had little or no previous experience.

School F—Social Studies. One class of 117 World History students and one of 82 American History students were assigned to a team of four. They had three excellent classrooms for regular or small groups and used the cafeteria for large classes. Personnel resources of the community were drawn upon quite often. Considerable use was made of the library. Project work, research, and independent study were carried on successfully.

School H—English. At this school the team of four was assigned to three English II classes of 111, 118, and 122 pupils. They tried a number of sub-groups with varying success. Two regular classrooms and a little theater were available to them. The latter had adjustable writing arms on a number of the seats. The cafeteria was used occasionally for the administration of tests, and the auditorium and library were suitable for certain activities. This group was made up of experienced teachers.

School G—Mathematics. This team consisted of three teachers and a clerk assigned to Plane Geometry classes of 80, 82, and 87 pupils. They used two regular classrooms and the cafeteria which was equipped with a chalkboard and audio-visual facilities. There was much opportunity for flexible grouping, staff utilization, pupil activity, and use of resources. Each large group constituted a class for such activities as the introduction of new material, lecture, enrichment, and evaluation; small classes were used for discussion, laboratory work, and homogeneous grouping.

Schedule Modification

Two high schools set up schedule modifications. One of the seven schools which had team teaching also had a modified schedule for the Physics classes. This involved one teacher and a part-time clerk. Students were scheduled for recitation, laboratory, testing, and other activities in such a way as to provide groups of various sizes for particular purposes. The total number of students was about 160. Instead of classes of 32 pupils for five periods every day, the teacher had groups of 20 for recitation, 20 for laboratory, 40 for lecture, and 80 for testing. Students were scheduled for the customary five sessions during the week within this pattern. The cafeteria was used for the testing; a lecture room and laboratory, for other types of activities.

At another school, the Golden Plan was introduced. It represented a more extensive modification. The subject areas involved were biology, physics, chemistry, Algebra II, trigonometry, English II, journalism, foreign languages, industrial arts, and art. Eleven teachers and approximately 350 students participated to some extent. Cooperative planning and teaching were an important part of this plan, just as in the team teaching approach. At times, large groups of pupils in a particular subject met for certain activities; at other times, pupils were grouped according to special instructional needs; at still other times, small groups or individuals pursued appropriate activities. There also were double blocks of time for certain situations. In essence, it was an interweaving of teacher-pupil schedules which incorporated flexibility. The auditorium was used for all larger-than-normal groups; the students provided their own clipboards for writing purposes.

The most drastically modified schedule was that of the Biology teacher, who contacted students 22 periods a week. He had eight periods for preparation and other activities. There were about 160 students in the total group; sections usually included about 20 students. However, because of complications of individual student schedules, some larger sections occurred. At those times, two or more teachers were available. Some student schedules were modified more than others, but generally each student had some courses which were scheduled at the same time each day, as in a regular schedule.

General Procedures

The participating members of the school staffs were chosen in several ways. Whenever possible those persons were included who expressed a

wish to be a part of the program. More than one third of the personnel in the study were volunteers; almost one third were assigned just because they were teaching in the selected subject area; and about one third were persons new to Jefferson County Public Schools. For the most part, the students involved were all those enrolled in the subject in the school. In the two cases where this was not so, the pupils in the experimental classes were selected at random on the basis of course election and assignment. Students in the control groups which were used for making comparisons also were the total enrollment in the subject in the school or were selected at random from the class lists.

Confining the research to schools in one district neutralized such factors as the influence of the central administrative staff, the effects of public understanding and support, the relationship of the school board and its policies, the influences of other organizations and agencies, the availability of services and supplies, and the degree of curricular freedom. Also controlled were such finance factors as assessed valuation per child, state and Federal aid, and expenditure per pupil. Moreover, by selecting a single school district, it was possible to overcome the problem of differences which might have resulted from community population factors, proximity to resources and creative centers, and the influence of size and location of the school district.

Weekly reports were turned in by individual team members to the director of the project. These contained a brief description of the previous week's work and notations of special events, activities, attitudes, and reactions. Twice each month the principals and deans reported the progress in their schools. Resource persons gave opinions, criticisms, and suggestions after each visitation or contact with school personnel.

A meeting of all participating personnel was held one night each month. This included a general session for items of interest to everyone and group sessions for emphasis on specific topics. The membership of these groups was changed any time it was necessary in order to meet the needs of the teams. Many other meetings were held by the teams during and outside school hours throughout the year.

Classroom practices, procedures, and techniques were not structured for the experiment. Teachers were encouraged to determine and utilize the most appropriate methods for their particular subjects. The curriculum guides which were available to them were those developed for the entire school system by area committees. Creativity and professional freedom and responsibility were stressed.

Evaluation and Results

The measurement of the academic progress of students was accomplished by the use of a test battery which was selected because it concentrated on broad intellectual skills and the ability to use what had been learned. Gains of a somewhat practical and permanent nature were measured. Also, a special Typing I test was constructed by the teachers of the

school district. It measured speed and accuracy in terms of the number of correct words per minute.

In addition to these tests, three instruments were constructed to secure information from students and teachers. One of these was a reactometer which was designed to seek the pupils' reactions in regard to whether the experimental classes were providing more or less opportunity than regular classes for certain procedures and practices. The pupils did not identify themselves and were able to make additional comments, if they wished. Another instrument was an analysis of procedures which was given to the participants to determine whether they thought certain procedures and practices were being used more or less frequently and successfully in the experimental classes than in regular classes. It was also possible to draw some conclusions regarding the attitudes of the people and the procedures which needed more emphasis. The third instrument was a measure of adaptability used to determine the team's capacity for adjusting to changing educational needs through the use of modern practices. The judgments about this were based upon observations, conferences, reports and records, and informal inquiry. Another important aspect of the evaluation process was the provision for reports and the communication of comments and other reactions of team members and resource personnel. This was a productive source of criticisms and suggestions for the project.

With regard to the hypotheses which were tested during the second year, these were the findings: *first*, teacher teams and modified schedules produced just as good results in the educational development of pupils as teachers working individually with regular classes; *second*, it was economically feasible to use these patterns in secondary schools because the small additional expense for clerical help in the study was compensated by extra services and responsibilities associated with the research; and *third*, the opportunities for varied pertinent learning experiences were provided better in situations using team teaching and schedule modification than in regular classes.

The reactions of pupils and teachers showed substantial support for the experimental program. Teachers made great strides during the year in developing the capacity of teams and individuals to adjust to changing educational needs. Progress was made in planning and preparation, use of outside resources, placement of students in terms of patterns of learning, and encouragement of teachers to use experimental methods.

Third Phase—Extension In Breadth and Depth

In the spring of 1959, plans were drawn for the following year, with the assistance of teachers, administrators, and resource people. *Involvement* and *commitment* became key words and concepts for participants. Four days in June and one day in August were used for a work session which had as its purpose the accomplishment of specific tasks considered important by the teachers for implementing the program for the school year 1959-60.

Within the framework of the general purpose of improving instruction and the utilization of the staff, the study concerned itself with the areas of schedule modification, various kinds of organization for team teaching, team guidance, non-graded English, placement of pupils, use of material and personnel resources, independent study by students, attitudes of pupils and teachers, and adaptability of teachers. Related problems and factors were: the definition and designation of cooperative planning time; identification of areas of proficiency of teachers; analysis of appropriate activities for various-sized groups of students; discovery and use of outstanding techniques; utilization of community adults as team members; involvement of pupils in team planning; analysis of individual students; increased teacher-pupil contact; class activities similar to workshops, conferences, and seminars; laboratory situations in various subject areas; examination and revision of the curriculum; development of techniques of self-evaluation by students; educational opportunities outside school time, but under professional direction; articulation of the experimental program with that of the junior high schools; and encouragement of action research by teachers.

How far the research was extended is shown by the following hypotheses which were postulated as guides for the investigation:

1. Modified schedules, adapted to the teaching function, produce better results in pupil achievement than the usual schedule.

2. Teams made up of teachers, paraprofessionals, pupils, and parents or other adults produce better results in pupil achievement than teachers working alone with regular classes.

3. A team composed of teachers, qualified in different subjects, produces better results in pupil achievement in those subjects than teachers working independently in regular classes.

4. Guidance personnel, working as a team in concert with a subject area group, are more successful in their program than those functioning independently within a school.

5. Non-graded English classes, adjusted to the educational development of the students, produce better results in pupil achievement than graded classes.

6. Pupil placement, the consideration of individual differences, is accomplished more satisfactorily in situations with schedule modification and team teaching than in those with regular schedules.

7. Material and personnel resources are used more frequently and effectively by teachers in the experimental program than by those in regular situations.

8. Increased opportunity for independent study is an effective procedure in teaching senior high-school students.

9. Attitudes and morale of teachers and pupils in the experimental situations are more favorable than those of persons in regular classes.

10. The adaptability of teachers improves as a result of participating in the experimental program.

Design of the Project

During the third year the same general pattern, greatly extended, was followed, as has been described for the second phase. By this time the point had been reached where assignments of teachers to the experimental classes were made in much the same manner as those to any other class. Students were entirely random selections. The structure of teams and the number of members on them were more varied. Approximately 3,000 students, 50 teachers, and 9 clerks or teacher assistants participated in some aspect of the project. Almost every curriculum area was involved to some extent at one or more of the schools. Once again, assistance was available from the deans, principals, administrative persons, and the consultants from the university. Also, in some of the situations, the librarians, community consultants, and pupil consultants were requested to participate.

Classes were scheduled in the various schools in relation to one or more of the hypotheses previously stated. The following experimental design represented some new departures in research on the utilization of the staff.

School A—Interdisciplinary Team. This was a team made up of a teacher specialist in English, a teacher specialist in social studies, and an instruction assistant. Tenth-grade pupils were scheduled in a two-period block for World History and English II; those in the eleventh grade had a two-period block for American History and English III. This required close cooperation between the specialists so that the program could be integrated to a much greater degree than merely point planning, and so that each subject would retain its identity. This is especially applicable to a small school where one department is not large enough to constitute a team. Much variety of procedure and grouping was possible and the use of time was adjustable and efficient.

School B—Business Education and Mathematics. Students in Typing I were taught by a team which had a teacher specialist, a general teacher, and a part-time clerk. A similar combination of persons worked in Typing II. The classes included about 75 students; the room was one which had been converted from two regular classrooms by the construction of a vision strip in the intervening wall. A sound system, overhead projector, and tape recording equipment added much to the program. The use of the personnel varied from the occasions when three persons gave individual help to students to those times when the class was performing under the direction of a tape recording while the three team members worked in an adjacent business machines room. Students were grouped according to skill and there was an opportunity for providing work appropriate to the level of ability.

The Plane Geometry team was composed of two general teachers, assisted by a clerk shared with the business education teams. They searched for ways of breaking through routine procedures and content

in this subject area. This team was especially interesting because the two teachers were inexperienced.

School C—Non-Graded English. One small high school set up unclassified English groups for 274 students in grades 10, 11, and 12. The three grade levels were combined into classes which permitted the use of procedures and activities adapted to the needs of the students, regardless of their classification. One teacher specialist, two general teachers, and one instruction assistant were assigned to these students, as part of their teaching duties. The team had two regular classrooms and one room large enough for an entire group. The latter was adjoined by a space used as a team office and for small group work.

The composition of the groups was as follows: Level One, 89 sophomores and 11 juniors; Level Two, 13 sophomores, 83 juniors, and 5 seniors; and Level Three, 2 sophomores, 4 juniors, and 67 seniors.

School D—Social Studies. A teacher specialist, a general teacher, and a clerk worked with classes in World History and American History. There were two special aspects in this situation. First, several ninth-grade superior students were selected for "advanced placement" in the World History class. The plan was to take these pupils through three high-school social studies courses by the end of the junior year. During that time teachers would be assisting the students to develop independent study and research skills so that during their senior year they could pursue a selected and planned project in depth. Second, 11 superior students in the American History group were selected for special independent study experience. Their time was divided among meetings with the rest of the class, individual work, small-group library study, and seminar sessions.

School F—Interfunctional Teams. This was a combination of two teams, one in social studies and another in guidance. The social studies group was described as a symbiotic team, composed of one teacher specialist, five general teachers, one clerk, two students, and a community consultant. The assignments of the teachers were distributed among classes in World History and American History. The guidance team included two deans and a teacher specialist, serving as a coordinating committee for the guidance functions related to the tenth-grade students. The teacher specialist was the same person who headed the World History team. This arrangement allowed cooperative planning and implementing of time and procedures for group guidance. The daily schedule was set up so that two large World History groups were scheduled at consecutive periods with a guidance period between them. This arrangement provided many possibilities of adjusting groups, time allotments, and assignments of teachers. For example, Period 2, Sections A, B, C, and D could meet in separate sessions of about 30 pupils, in a large group of 120, or in other combinations which would serve a specific purpose. The same was true of Period 4. During Period 3, which was only 30 minutes in length, the students were usually divided into ten groups of about 24 pupils. When advisable, Sections A, B, C, and D

used Periods 2 and 3 for World History or guidance, which permitted an extra long period for accomplishing appropriate aims; the following day this was done for Sections E, F, G, and H with Periods 3 and 4. In addition, it was possible to have all 240 students meet at the same time for a lecture or some other suitable presentation without disrupting the schedule.

School H—Expanded Team. This was a team in sophomore English with one teacher specialist, two general teachers, one instruction assistant, a librarian, two students, and two community consultants. The team was assigned to three large groups of over 100 students each. It was described as a symbiotic team because it included representatives from various groups, who were working together. This was a venture into an area and level of cooperation which had not been previously attempted. It provided an opportunity for interaction between professionals and other persons, with direct relationship to an academic area. The two students were seniors who were members of Future Teachers of America and were interested in securing background information and experience. The community consultants were interested adult members of the school area, who served two functions: they provided a sounding board for the team and assisted in obtaining material and personnel resources.

School G—Partial Schedule Modification and Teaching Teams. Three subject areas in this school were included in the experimental study. There was one clerk to work with all the groups. A teaching team was formed in Plane Geometry with a teacher specialist and two general teachers. It was possible to have a large group of students together for introduction, explanation, review, audio-visual presentations, and certain other activities. The groups were divided into various combinations for work which ranged from remedial help to advanced and independent work.

A schedule modification was set up in World History, with a teacher specialist and four general teachers assigned to the classes. The specialist had five periods a day for this subject, one of the general teachers had three periods, one had two, and two teachers each had one period.

Students were divided into 12 sections of about 30 each. The schedule permitted a daily option of meeting in small sections or large groups.

The choice of options was accommodated by study-hall arrangements. For example, when Option 1 was followed, Section E had study hall during first period, and when Option 2 was followed, Section E had study hall during third period. The decision was made far enough ahead so that the study-hall supervisor was aware of shifts in student personnel. Class rolls were provided for attendance check. This procedure created no real problem for teachers or pupils. In addition to the possibility of groups of 30 or 180 students, various grouping combinations were made in cases where more than one section met at the same period. About half the time was spent in large groups and half in small sections, with activities and procedures suited to the size of the group.

The general plan for the Physics class was similar to the one just described. A teacher specialist and a general teacher constituted the staff with part-time help of a clerk. There were five sections of students.

It was possible to change this schedule day by day. When students met in a large group second period, those in Sections A, D, and E interchanged Physics and study hall. Generally, there were two large meetings each week for presentation, motivation, enrichment, and evaluation. The three small group meetings each week were used for laboratory work, recitation, discussion, and other appropriate activities.

School E—Schedule Modification. Basically, this was an interweaving of teacher-pupil schedules which incorporated flexibility. It was referred to as the Golden Plan from the name of the school and from the promise it held as a means of improving the utilization of the staff. Most of the faculty and students participated in some phase of the program. The curriculum areas involved were science, mathematics, social studies, English, business education, music, art, homemaking, and industrial arts. The schedules in some subjects were changed completely so that at times large groups of pupils met for certain activities and at other times small groups or individuals pursued appropriate tasks. In other subjects there were double blocks of time which rounded out the schedule pattern. This modification can best be illustrated by several examples taken from the school schedule.

The total enrollment in Biology was approximately 150 students. Sections generally had about 20 pupils; however, in instances where double-sized sections occurred, two teachers were available. Each week the Biology specialist had ten preparation periods instead of the normal five. This did not mean that he had a subnormal teaching load, but rather that the students were redeployed to take advantage of special sized groups and to use professional time in a better manner. Similar modifications were set up in Chemistry and Physics. Other changes in the schedule of this school included double blocks of time and special team organization.

Some student schedules were modified more than others, but most pupils had some courses which were scheduled at the same time each day as in a regular schedule. The rest of a student's program usually included a subject which was completely modified, some double-block subjects and team teaching organization.

A Typical Modification of a Student's Schedule

Period	*Monday*	*Tuesday*	*Wednesday*	*Thursday*	*Friday*
1	Eng. II	Eng. II	Eng. II	Eng. II	Eng. II
2	Pl. Geom.	Pl. Geom.	Pl. Geom.	Pl. Geom.	Pl. Geom.
3	Shop II	Study	Shop II	Biology	Study
4	Shop II	Biology	Shop II	Biology	Shop II
5	Biology	Study	Study	W. Hist.	Biology
6	W. Hist.	W. Hist.	Study	W. Hist.	W. Hist.

Procedures and Related Factors

In addition to the members of school staffs, the personnel involved in the third year's research were the director of the project, a secretary, and instruction assistants. Resource persons were members of the administrative staff of Jefferson County Public Schools, consultants from the University of Denver, and students and community persons. All-personnel meetings were scheduled for one night each month; team meetings, visitations, and conferences were frequent. Considerable attention and time were given to specific long- and short-range planning.

Monthly reports were turned in by individual team members to the director of the project. These contained detailed descriptions and evaluations of the previous month's work, as well as comments about special events, materials, personnel resources, student reactions, and other pertinent information. In this report the participants also discussed their plans for the following month. The principals and deans reported the progress each month in their schools and gave their personal reactions to it. The resource persons submitted evaluations and suggestions after each visitation or contact with school personnel.

Once again creativity, professional freedom, and personal responsibility were stressed. Teachers were encouraged to determine and utilize the most appropriate methods for their particular subjects. They developed specific classroom practices, procedures, techniques, materials, and plans with reference to various sized groups, individual needs, and related factors.

Method of Evaluation

The use of *Iowa Tests of Education Development* was continued for the measurement of the academic progress of the students. This battery concentrated on broad intellectual skills and the ability to use what had been learned; it measured gains of a somewhat practical and permanent nature. The initial test, Form Y-3S, was given in October 1959; the final test, Form X-3S, was given in May 1960. All Jefferson County pupils in grades 10, 11, and 12 took the full-length versions. To compare the experimental and control groups, the following standard scores on the subtests were used: Social Studies, Test 1, *Social Studies Background* and Test 5, *Reading Social Studies;* English, Test 3, *Correctness of Expression* and Test 7, *Reading Literature;* Mathematics, Test 4, *Quantitative Thinking;* Science, Test 2, *Natural Science Background* and Test 6, *Reading Natural Sciences;* Schedule Modification, The Composite Score; Use of the Librarian, Test 9, *Uses of Sources of Information.*

For measurement and analysis in the area of business education, special tests were constructed by the teachers in the school district. In Typing I, a three-minute, straight copy, timed writing was used to determine speed and accuracy, and an objective test was constructed to evaluate learning of information related to the subject area. For Typing II, a five-minute timed writing was used as well as a different, more advanced test of information. All of these tests were administered in November and May.

Use was again made of three instruments which had been constructed during the second phase in order to secure data about the attitudes of students and teachers and to determine whether or not experimental procedures were actually being used in the classroom. The first of these was a reactometer which was designed to seek the pupils' reactions in regard to whether the experimental classes were providing more opportunity than regular classes for some generally accepted procedures and practices. It included 21 items to which the student responded yes, undecided, or no. The pupils did not identify themselves and were asked to make additional comments if they desired. This was done in November and April. The second of these instruments was an analysis of procedures which was given to participating personnel to determine whether they thought certain procedures and practices were being used more frequently and successfully in the experimental classes than in regular classes. There were 65 items for which the individual could select one of five responses, varying from "strongly agree" to "strongly disagree." It was also possible to draw some conclusions from the responses regarding the attitudes of the personnel and the procedures needing emphasis. This was also done in November and April. The third instrument was a measure of adaptability used to determine the teams' capacity for adjusting to changing educational needs by the utilization of modern practices. It was a check list completed for each group by the director of the study. The reliability and validity of this instrument had previously been established. The judgments were based on observations, conferences, reports and records, and informal inquiry. An adaptability score was derived from assigned values of responses. This was done in May only.

A fourth locally constructed instrument was prepared for this project in order to measure the effectiveness of guidance services, since this was a new facet of the investigation. It emphasized the functions of group guidance. The deans, the supervisor of guidance services, and the director of the project were utilized to carry out this evaluation. It, too, was done in November and April.

Subjective evaluation of the project by resource persons and participants was an important source of criticisms and suggestions for the project. These were received through the various reporting media. They were grouped, summarized, and interpreted.

Most of the data were treated through analysis of covariance in order to determine whether there were significant differences. In establishing confidence limits for the interpretation of the data, the five per cent level was used to represent a significant difference, the one per cent level to represent a highly significant difference. Some data were organized and interpreted by the use of tabulation, rank, percentage, and selection for emphasis.

Results and Findings

Some of the treatments of data derived from the measurement of achievement showed significant differences favorable to the experimental

groups; a number of treatments revealed no significant differences between the experimental and control groups. In looking at the results of the second and third phases, there was a discernible movement in the direction of achievement results favorable to team teaching and schedule modification. This was taken to mean that, as the new patterns became familiar and as we learned to utilize them more effectively, greater and greater advantages would accrue in the educational opportunities for students.

The reactions of students revealed that they thought that experimental classes provided more opportunity than regular classes for some generally accepted procedures and practices. They considered it advantageous to be in classes with teaching teams and modified schedules. Comparison of initial and final results showed substantial, sustained support for the over-all program. One hundred cases were drawn at random to determine the rank of the items in terms of student reactions. Those opportunities in experimental classes which showed the greatest gain in rank during the year were: using other kinds of printed materials besides the textbook; hearing about the experiences of other students; helping the teacher plan some of the classwork; learning to think for oneself; getting individual help when needed; hearing talks and seeing demonstrations by people from outside the school; assuming some leadership in class activities; and understanding the purposes of the subject and classwork.

Results of the analysis of procedures revealed that there were no significant differences between the classification of personnel, with regard to opinions that certain procedures and practices were being used more frequently in experimental classes than in regular classes. This made it possible to assume that principals, deans, teachers, and clerks were supporting the program equally well. This was the case at the beginning and at the end of the school year. However, there were differences between schools with relation to the use of these procedures in experimental classes as compared to regular classes. This indicated significant differences between schools in the experimental mindedness of the personnel and their support of the project. Nevertheless, the scores for all schools were high enough to indicate that the experimental project was looked on with favor in every case. The practices which showed an extent of utilization most favorable to the experimental classes were: making definite short-range plans; using a variety of techniques and materials; teaching techniques of study; providing opportunities for creative thinking; developing desirable patterns of behavior; organizing the work with regard to pupils of varying abilities; providing and relating supplementary printed materials in the classwork; making effective use of audiovisual equipment; and using contributions of other members of the staff.

The results of the measure of adaptability showed that there was no significant difference between schools with regard to the capacity of teachers to adjust to changing educational needs; there also was no difference between subject areas with regard to the utilization of modern practices. In comparing the third phase with the second phase there

appeared a difference which was significant at the one per cent level. This was interpreted to signify that the personnel during the third year were more adaptable than those during the second year. This had also been true when comparing the second year with the first year. This indicated a dramatic increase in experimental mindedness from year to year.

The treatment of the data, drawn from the use of the instrument for determining the effectiveness of guidance services, showed no significant difference between the experimental situation and others. However, the personnel involved expressed the opinion that a continuation of that project would bring cumulative gains.

Other less tangible sources for making judgments about the experimental program bore out the findings of the objective data and gave support to a conviction of the participants that long-range advantages might even surpass those discovered during the project.

In testing specific hypotheses for the third phase, the following conclusions were drawn:

1. In comparison to regular classes, as good or better results in pupil achievement were produced by modified schedules, various kinds of teams, and non-graded English classes.

2. Guidance personnel, working as a team in concert with a subject area group, were more successful in their program than those functioning independently within a school.

3. Pupil placement and the use of material and personnel resources were accomplished more effectively in the experimental program than in regular situations.

4. Increased opportunity for independent study was an effective procedure in teaching senior high-school students.

5. Attitudes and morale of teachers and pupils in the experimental situations were more favorable than those of persons in regular classes.

6. The adaptability of teachers improved as a direct result of participating in the experimental program.

General Conclusions and Comments

The advantages of team teaching and schedule modification far outweighed disadvantages. Evaluations indicated that considerable progress was made in the effective utilization of professional time, use of material and personnel resources, the development of appropriate teaching procedures, promotion of good attitudes and morale in teachers and students, and provision of adequate facilities and equipment. The small additional expense for clerical help in the study was compensated by extra services such as the preparation of permanent materials, the saving of funds for substitute teachers, and the completion of special reports and work related to the study. It was apparent that no concept of class size was justifiable without the consideration of function, purpose, and procedure. Groups of all sizes were equally effective, but for entirely different learning situations.

Morale of students was high and they generally considered it advantageous to be in classes of teaching teams and modified schedules. There was substantial support for the program throughout the three years. Even though there were differences between schools with regard to the experimental mindedness of the teaching personnel, in all cases the project was looked on with favor. There was a significant gain each year in support of the experimental classes as well as in the use of modern procedures and practices. Great strides were made in developing the capacity of teams and individuals to adjust to changing educational needs.

The acceptance of the experimental program by the parents in the community was exceptionally good. Criticisms were negligible, but there were numerous questions directed to the teachers, principals, and members of the administrative staff by individuals seeking information about the program. Teachers and principals had a favorable attitude toward the project. They participated actively in setting the design and moving the research along. They expressed opinions which indicated that team teaching and schedule modification had advantages in the following areas: providing a proper setting for learning; motivation of learning; teaching basic skills and knowledges; individualized learning; use of material and personnel resources; effective planning and preparation by teachers; efficient use of instructional talent; and the encouragement of professional growth.

Problems which could arise unless guarded against were: laxity in reinvesting "saved time"; inequality in assuming the responsibilities for the work of the team; dissipation of pupil-teacher rapport; and inadequate facilities.

There is no reason to expect the present program to diminish or falter. The personnel of Jefferson County School District R-1 are enthusiastic about the results and future prospects of the program. The worth of team teaching and schedule modification are substantiated by the reactions of visitors to the school district and by the reception of previous reports. This position is further strengthened by comparable results obtained in numerous other projects associated with the Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools.

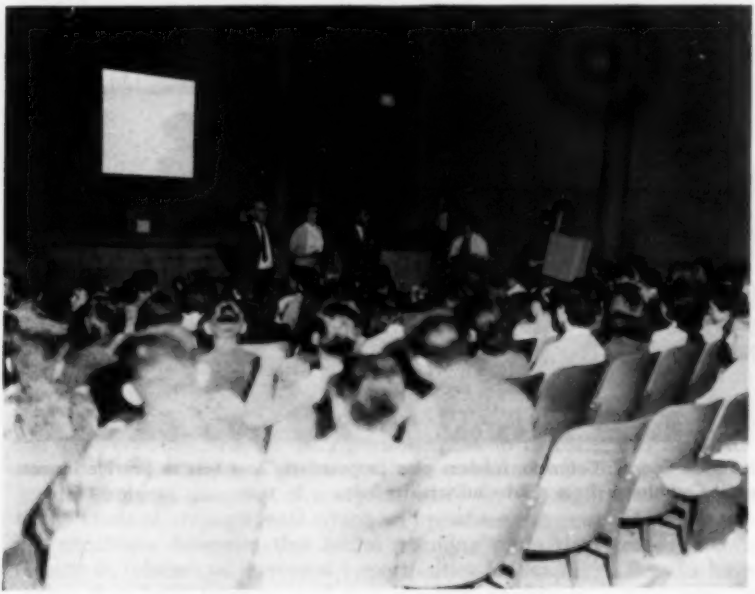
Any school can set up a pattern of team teaching. Numerous combinations of persons can be organized within subject areas and across subject lines. The essence of the program lies in learning to work together in the most effective fashion. Any person suited to teaching can make the necessary adjustments. Construction of a modified schedule presents no greater problem than that of a regular schedule. Thought must be given to the kinds of arrangements which will produce the most efficient learning situations; however, this initial planning more than reaps its own reward in relation to increased opportunities for learning. Results have shown that both teachers and pupils adapt readily to a new type of schedule.

It is likely that present buildings and facilities will be remodeled without hesitancy when it is necessary to accommodate an improved instructional program. There is much that can be done in this regard with a minimum of expense. In relation to future buildings, Jefferson County School District R-1 has already embarked on a program of providing school plants designed on the basis of educational specifications which take into account these new teaching concepts. Marie Creighton Junior High School is being constructed with classroom triads to accommodate groups of various sizes. Support of the community is indicated by the insistence of new citizens' building committee that the advantages discovered during the three-year project be a part of the planning of new school plants.

One of the great contributions of the three-year project has been the establishment of a situation tuned to research, in which teachers feel free to investigate promising ideas for improving the quality of education. This kind of research has the great advantage of immediacy, since the discovery of better ways of teaching has a present effect upon the knowledges, understandings, skills, and attitudes of the students.

Jefferson County, Colorado, teachers plan cooperatively how best to provide instruction. Consultants from nearby universities help.

Jefferson County, Colorado has organized students into small groups for part of the time for study and discussion.



Large-group instruction for part of the time makes small groups desirable and feasible.

CHAPTER VIII

J. Sterling Morton High School and Junior College, Cicero, Illinois, Uses Tapes, Language Laboratories, and Team Teaching

WALTER L. COOPER

CONTINUED examination of present instructional practices and experimentation with varied approaches to the teaching process are essential, if maximum effectiveness of the learning outcomes are to be realized.

In the fall of 1958, J. Sterling Morton High School and Junior College initiated four projects under the sponsorship of the Staff Utilization Commission. These projects were concerned with: (1) the use of tapes as a media of instruction (two projects); (2) the effective use of a language laboratory; and (3) the team approach in teaching.

These four projects involved the direct participation of nine staff members, five division heads, and a coordinator of the program. Three hundred and forty students were daily participants during the two-year period with an excess of one thousand others becoming involved through testing programs. Final reports have been prepared for the Commission and copies can be made available to persons who are interested. The person or persons involved in each project have prepared a brief summary report for this publication.

VOICE LESSON TAPES IN FIRST-YEAR SHORTHAND

In this study, by utilizing a control class and an experimental class, it was possible to observe firsthand what help recorded tapes could be in improving quality of instruction and facilitating learning. In comparing the progress made by the two groups over a period of two years, it was not shown that a class using recorded tape instruction were actually superior in learning to another class taught in the traditional oral method. It is thought quite conclusively that, in an introductory course in shorthand, the teacher can do a superior job of teaching without the use of tapes. The use of tapes requires many hours of teacher preparation for use in a situation which demands that oral instruction also be given along with the tapes.

Walter L. Cooper is Superintendent of J. Sterling Morton High School and Junior College, Cicero, Illinois. The following persons assisted in preparing this report: Team approach—Dr. John Antal, Mrs. Elizabeth Hixon, Joseph Wintering, and Dr. Homer Young; Tapes in Beginning Shorthand—A. J. Gessler; Teaching Italian by Tapes—Miss Emily Jahelka and Frank Naccarato.

Voice tapes are definitely a partial answer to a problem which confronts teachers of shorthand. That is, how do we deal effectively with individual differences in a classroom of both low and high ability levels? In this study, arrangements were made to have the experimental class take dictation in a special laboratory made up of a battery of tape recorders; listening booths for individual students equipped with earphones, channel selector, and volume control; and a lineup of tapes recorded at various rates of dictation. This allowed for each student to take dictation practice at the exact speed which challenged him. All tape recorders were being played at the same time, and students could turn channel selectors to listen to any one tape. One tape would have dictation at rates of 50, 60, and 70 words per minute; another at 60, 70, and 80; another at 70, 80, and 90, *etc.* Thus, the struggling student was working at his level and the gifted was being challenged at a higher level.

Thus, by utilizing recorded tapes during second semester of first-year shorthand in a laboratory situation, it was found that greater over-all progress could be made by students. It is felt that less students will experience failure. Instead of a teacher giving practice dictation to an entire class at one speed at a time, it is possible now to have simultaneous dictation practice which benefits the entire class. Further, the students in a class are keenly aware of the helpful situation and are eager to accomplish.

If tapes are to be used for first-semester instruction in shorthand, it is felt they must be reviewed, revised, and in some cases remade each year in order that up-to-date instruction and pertinent current instruction may be given. Use of a library of tapes with no regard to the current learning situation would be a mistake.

If possible, shorthand classes should be grouped according to intelligence and ability levels. Revisions in class enrollment should be made from time to time as differences in ability are discovered. Only in this way is it possible to give the best instruction to all the students so that progress is possible in all groups: slow, intermediate, and fast.

As a result of this study, this teacher feels that pre-recorded tapes should be considered supplementary tools for learning, which can in certain cases help to utilize the teacher's time better. The tape recorder should never be allowed to be used as a "crutch" for a lazy or disinterested teacher.

There is evidence that in the future it may be necessary to compress the learning of shorthand into a shorter span of time. The use of tape recorders and a laboratory may be of great assistance in giving the student more instruction in less time.

Team Teaching in American History and American Literature

In an experiment supported by the Ford Foundation and sponsored by the "Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools," two Morton High School teaching teams participated for two consecutive academic years; *i.e.*, 1958-59 and 1959-60.

Each team, which consisted of one English or American literature teacher and one American history teacher, instructed eleventh-grade students.

The team approach was predicated on: (1) a wider and more effective utilization of teacher skills, time, materials, and techniques; (2) providing accelerated students with greater scope for original investigation and cooperative projects; and (3) the recognition of the need for students to develop those insights into the relationship between American literature and American history seldom possible in the traditional, single-subject-centered approach.

It was discovered that the philosophy which had determined the general direction and the objectives of the team approach subsequently expanded out of the dynamics of the experiment and pointed to possibilities which were not initially envisioned.

The organization device used to achieve a more fruitful correlation between the two subject areas was the establishment of unifying objectives. Under the unifying objective "Colonial conditions modify Old World legacies," the history classes considered the clash of Old World interests in the New World and the effect of nationalistic colonization; while the English classes considered and analyzed the literature and contributions of the Puritans, witchcraft, and Arthur Miller's *The Crucible*.

Under the unified and coordinated objectives, the teaching teams and the students in the consecutively scheduled American literature and American history classes were guided, as it were, along a two-lane highway; *i.e.*, the literature lane and the history lane. Thus students traveling on one lane were able to share the broad views and insights which were gained by students moving on the other lane.

With cooperative planning by the team teachers in consecutively scheduled classes, emphasis was given to topics which were relevant or in which students manifested interest. Field trips were made without student loss of time in other classes. And films, which teachers under a regular schedule would view three or four times on certain days, were jointly viewed by the two classes, thus releasing one of the teachers for conferences with students or for more intensive preparation.

The English teacher provided instructions and guidance in writing techniques as the need arose. Consequently, the history teacher found that the quality of his students' reports, reviews, and other written assignments was higher than that of students who were not in the experimental groups.

Although the unified objectives provided the means for a fruitful and significant coordination of American literature and American history, the team teaching program allowed flexibility for extended concentration on those activities which engaged the creative interests of students.

Arrangements can be made to obtain an outline for the coordination of American literature and American history developed and used by the teaching teams at the Morton High Schools. It must be stressed, however, that the successful adoption of the team approach presupposes the availability of certain facilities; *i.e.*, classrooms large enough to accommodate

two or more classes for viewing films and for special sessions, conference rooms, and the existence of an atmosphere conducive to experimentation.

Another result of the experiment was the emergence of an objective test aimed at measuring the progress of the experimental groups and comparing it with that of six control groups. The construction of an instrument which meets the conditions of validity, reliability, and objectivity requires continuous appraisal, revision, and refinement. The test, therefore, which was conceived and initiated during the experiment is still being studied, modified, and evaluated.

That certain values and insights were realized which had not been anticipated indicates the fruitfulness of team teaching. Because of the growing complexity and increasing scope of each subject, few teachers are prepared to teach and to direct learning activities in more than one area with equal proficiency. A teacher does not escape the danger of teaching as if his subject had no windows overlooking other equally significant fields of knowledge and experience unless he maintains a vital awareness of his relation to and dependence upon sources of intellectual nourishment other than those peculiar and limited to his own subject matter. Team teaching minimizes the danger of circumscribed or "windowless" instruction.

The team teachers with consecutively scheduled classes were able to share resources and plan and foster learning situation under conditions less subject to the interruptions and fragmentation of curriculum experiences which confront the teachers whose approach is characterized by isolation from the resources and responses outside of their single-subject-centered classroom.

It was found that, by relating his course to another subject and working with another skilled person, the teacher acquired valuable insights into unexplored aspects of teaching and learning processes. The team teachers enjoyed occasions for developing that mutual respect which most traditional approaches do not afford.

Besides cutting across major curriculum areas, the team approach can be effective within a single department of studies. Thus a world history teacher with a special background in Latin American history can be utilized as a resource person in classes other than his own. Team teaching may involve two, three, or more teachers, depending on the scope of the subject and the needs, abilities, and number of students. A course for academically talented students investigating American culture may involve teachers with special backgrounds in art, music, history, literature, and sociology.

Effective team teaching requires not only planning and coordination between teachers and administrative officials, but also a more accurate assessment of the valuable resources which are inherent in most faculties but which unfortunately are seldom fully realized.

Stressing creative teacher cooperation, flexibility, fuller realization of both teacher and student potential, and a more strategic application of teaching skills, team teaching at the Morton High School was found to

provide more opportunities and greater latitude for both teaching and learning processes to achieve more abundant fruition.

Teaching Language by Use of a Language Laboratory

In the fall of 1958, a two-year testing program was begun at Morton with the intention of securing data on which to base conclusions regarding the effectiveness of the language-laboratory method of teaching foreign languages. The table below shows the means of the scores on written examinations and aural comprehension tests given before and after the language laboratory was installed and used. The second series of means (M_2) was obtained after less than one full year of laboratory drill. Differences in means which are statistically significant are starred (*).

	Written Examinations (Grammar—Vocabulary—Reading Comprehension)			*Aural Comprehension Examinations*		
Language	*Mean (M_1) 1958–1959*	*Mean (M_2) 1959–1960*	$M_2—M_1$	*Mean (M_1) 1958–1959*	*Mean (M_2) 1959–1960*	$M_2—M_1$
French	50.20	53.21	+3.01	179.00	187.00	+8.00*
German	40.18	37.00	−3.18	14.58	13.88	−.70
Latin	62.03	61.82	− .21	—	—	—
Spanish	44.19	50.93	+6.74*	26.35	29.16	+2.81*

It will be evident from a study of the table that the results secured vary so greatly from language to language that it is impossible to draw any conclusions as to the effectiveness of the language-laboratory method of teaching.

Teaching of Italian by Tape Using a Teacher not Trained in Italian

The experiment was to determine to what extent a teacher trained in languages, but not in the particular language under investigation, could teach Italian, having at her disposal tapes prepared by a master teacher of Italian. Therefore, the hypothesis was that the language instruction under these conditions could be effective. The experiment started in the 1958-59 school year was repeated and continued for another year, so that this year there are two sections involved in the experiment.

The underlying philosophy and methodology utilized in the teaching of the first- and second-year of Italian were basically the same. However, the very nature of the second-year Italian necessitated several changes in material content. Additional material was prepared with increasing degrees of difficulty which was in consonance with the students' achievement or mastery of the subject matter.

The master teacher, on the basis of his experience, has set up certain basic goals to be achieved: (1) ability to speak the foreign language; (2) ability to understand the spoken language; (3) ability to read the foreign language for enjoyment; and (4) developing an insight in the culture of the country whose language is being studied.

To attain the first two objectives, adequate material was prepared in script and on tape by the master teacher and taught by the aural-oral method. For the other two objectives, material with cultural content was selected and taped. It was thought that the students should become familiar with four great periods of learning, namely: (1) Ancient Rome; (2) Medieval Italy; (3) Renaissance Italy; and (4) Modern Italy.

It must be strongly emphasized that the two cooperating teachers worked together harmoniously during the two years. Both teachers displayed a great amount of enthusiasm throughout the two years. The students responded warmly to this enthusiasm, thus creating an excellent student-teacher rapport. Perhaps the students realized that the teacher, in the process of teaching them Italian, learned the language right along with them, thus creating this wholesome classroom condition.

It may be interesting to point out that at the outset only eleven students took part in this experiment. By the end of the first year, the interest created by this experiment throughout the school caused an increase in the number of students enrolled in Italian in the high schools as well as in the junior college.

At the outset it was decided not to have a control group to be compared with the experimental group. However, on several occasions the master teacher administered similar tests to the experimental group as well as to another group taught by a teacher with a master's degree in Italian. Amazingly, the results showed no significant difference between the two groups. This finding, in addition to the results of the weekly achievement tests given to the experimental group, led the master teacher to the conclusion that these students have very well assimilated the material which normally is considered one unit of Italian for each year in any high school.

It is recommended to anyone who may wish to try this type of experiment that:

1. two congenial teachers be selected;
2. one of these be a teacher who is thoroughly conversant with the language and cultural background of the country whose language is to be taught;
3. before seriously embarking upon this experiment, the two teachers have a trial run for at least two weeks with some 15 to 20 volunteer students; by so doing, the teachers will gain insight into what lies ahead;
4. the two teachers select in advance a good textbook that lends itself to this type of experiment, and then prepare the daily exercises for the entire year on tape as well as in writing. Tests for each chapter ought to be prepared in advance.

CHAPTER IX

Lakeview Junior-Senior High School, Decatur, Illinois, Faculty Studies and Develops a Variety of Staff Utilization Projects

David W. Beggs

RECOGNIZING that the quality of education generally is determined by the quality of teaching and believing that the curricula of the school can be improved by careful analysis, the faculty of Lakeview High School began a two-year study in the spring of 1958 to find ways of better utilization of professional teaching time. The study was financed by grants made through the National Association of Secondary-School Principals' Commission on the Experimental Study of the Utilization of the Staff in the Secondary School by the Ford Foundation. The funds received were used to finance a faculty workshop which extended over the summer months of 1958 and 1959, to purchase instructional supplies above those supplied through regular school district funds, and to provide the funds for special standardized tests. Countless hours of staff time have gone into the project both during the summers and during the busy school years. The compensation that teachers received was only token payment for the actual time and energy which the staff expended.

When the study was undertaken, we said: "The success or failure of the project cannot be measured in any way other than the beneficial effects it brings about in class instruction." The statements, therefore, we have made up until now have been highly qualified. Now, however, this project is concluded and we are prepared to take a position on the worth of the experiments with which we have been working.

Even though the formal phase of this particular project is concluded, we expect to continue many of the practices on a permanent basis and we hope to continue trying extensions of the ideas we have found to benefit instruction.

It must be forcefully pointed out that each innovation was carefully structured so the student could not possibly receive instruction which would be inferior to the education he would have received had we not tried the new or different methods. A before-after test design (by means of objective tests with national norms) and a comparison design (by means of subjective teacher and student ratings) were used in those

David W. Beggs is Principal of the Lakeview Junior-Senior High School, Decatur, Illinois.

areas where content was adjusted or where the methodology was substantially altered.

The total project's activity has taken two general directions: *one*, class reorganization; and *two*, curriculum improvement. To separate these is to lose sight of the total worth of the studies.

The entire faculty, especially the participating faculty members, are to be congratulated for their highly professional attitude as demonstrated by their interest in the instructional improvement aspects of this project. The general desire of the teachers to find new and improved ways of teaching young adults, as well as an over-all interest in curriculum development, is characteristic of the hard-working and capable Lakeview staff. Teaching and developing the curriculum are complex arts which are demanding of mentality and energy. This competent staff was willing to "go the extra mile" in exploring new patterns of instruction.

The core of teachers working on the general problems, those of better utilization of staff and of instructional improvement, was selected from most all of the department areas in the school. Included were representatives from business education, English, foreign language, guidance, mathematics, physical education, science, and social studies. This gave a broad base and a diverse background of interest to the workshop staff.

During the summers the group met in "brain-storming" sessions on a weekly basis and the participants worked in sub-groups and individually on a daily basis. During group sessions, broad areas were considered; problems were identified; and solutions were proposed. The action stage of the project was through the following years. The intensive work of planning, developing course content, making unit schedules, determining test designs, and studying related professional and subject-area literature could never have been done in kind or to this degree during the busy school year. About this, we have no doubt; therefore, we are led to conclude the quality of education can be substantially improved by utilizing professional teachers' time during the summer months. The question, of course, is: How are such activities for the school's program improvement to be financed? For this problem we recognize no easy or immediate solution; but we are firm in our conviction that the school's program will not be greatly improved or radically changed until teachers, who are to meet students in the classroom, are provided organized time for concentrated work on curricular improvement.

Also, from this experience we are led to conclude that a common attack of a staff on the problem of instructional improvement is the best approach. Teachers from several subject areas (skill teachers and subject matter instructors) add strength to each other in developing course patterns. By identifying a common problem and working on it, the staff tended to be more critical of group and individual procedures. The group activity stimulated discussion, encouraged careful analysis, and brought about improvement.

While this project required additional teacher time during the year in filling out numerous surveys, while class schedules were sometimes dras-

tically rearranged, and while more cooperation was necessary on the part of all the staff, a wholesome cooperative atmosphere prevailed. There was also more activity within and among the departments. This added to the school's total effectiveness.

We noticed among the students added interest in their class activity. The mere fact that some courses were taught in a different way than our students were used to stimulated interest and resulted in more pupil accomplishment.

Another broad outgrowth of this project was an awakened interest in action research on the part of some staff members. Instead of making subjective judgments on individual and class progress problems, the more scientific and objective approach was used in the analysis of student and class learning difficulties. Instead of guessing what students did or did not know and instead of speculating on individual and group ability, objective answers to these questions were sought.

There are several experiments which, for several reasons, were unsuccessful. From the faults in these have come some valuable insights into things we cannot do with profit. Knowing what instructional procedures and which learning experiences are not successful is considered beneficial.

We are pleased we undertook this study because of the new horizons it has opened to us to evaluate, because of the improvement we have seen in our classes, and because of the beneficial effects it has had on students and the faculty.

General Recommendations

The following appear to be areas where there should be further consideration for possible beneficial changes:

1. Increased emphasis on independent responsibility for learning on the student's part
2. Added concentration on learning experience evaluation on the part of the professional staff
3. Increased time devoted by the teacher to the central business of the professional teacher, that of student development through instructional improvement
4. Added flexibility in grouping so students are in groups according to the purpose of the lesson; *i.e.*, small groups of ten for discussion and large groups of one hundred or more for lectures
5. Increased freedom in varying the length of time and the number of times a group meets each week
6. Added specialization of function among teachers (This implies that different teachers—people with various abilities, interests, and training—will perform varying and specialized functions. Some teachers will give large-group lectures and others will work with small discussion groups.)
7. Increased addition of non-certificated personnel to a school staff to do clerical and non-technical work presently being done by highly skilled staff

8. Added unity in subject matter study, implying the development of concepts which cut across subject matter lines as they are now defined
9. Increased use of mechanical devices, tapes, over-head projectors, educational television, teaching machines, *etc.*

Experiments' Summary

Large Group–Small Group Instruction

Because we believe some learning experiences can be as effectively presented in large groups (up to 116 students), and because we believe other instructional activities demand small groups (with as few as 14), we varied class sizes depending on the nature of the instructional activity.

For instance, in senior English we brought together two sections to listen to the English literature lectures. This meant that one teacher gave the lecture to 79 learners while the second teacher was free to correct papers and do research for subsequent instruction during this class period. We think it is folly for a teacher to repeat a lecture to several groups (sometimes up to five a day) when all groups can be combined for the presentation at one time. This saves valuable teacher time, instills more independent responsibility for learning in students, and develops critical listening and thinking skills as the learner takes notes and assimilates the content.

It is unrealistic to assume all teachers have the same training, interest, and ability in all phases of each course. By using this "team" approach to teaching, the special knowledge and individual talents of instructors can be utilized. Again, in English on the twelfth-grade level, one teacher taught the unit on Literature of the Restoration Period to the large group, while the other teacher researched a unit on Elizabethan Literature. The quality of instruction was thus improved by the added teacher preparation which went into the large-group lectures.

The students enjoyed and profited from the large-group classes. This was born out by attitude surveys and objective tests.

Appreciation of literature cannot be developed alone by listening to a masterful teacher presentation. This is where the small groups have their place. The small groups were used after a series of lectures or sometimes in the middle of the series to give students the opportunity to discuss, to analyze, to evaluate, to consider, and to debate. The thought process is often best stimulated in these discussion groups after background facts and information have been assimilated.

Testing, showing instructional films, and using filmstrips are done as effectively and more efficiently in large groups than in small groups.

In our health classes on the eleventh-grade level, we found merits in large-group instruction by utilization of community resource people. We were able to secure an outstanding doctor of medicine in one series of lectures. This meant that 116 students had the benefits of an expert, yet the consultant only needed to be in the building for one hour. It is an impossibility to get the expert services of outstanding resource people to repeat their lectures to four or five classes scattered through an entire

day. Not only, therefore, does large group instruction utilize teacher time, but it also makes it possible to enrich the course content by fuller use of resource people.

The Use of Machines

Electronic tapes were used in attacking the long recognized problem of spelling instruction for our seventh- and eighth-grade students. A teacher with special training (the only one on the staff) put basic lessons on tape. These were played in each home room. The various teachers checked the papers and helped students as the tapes were being played. A contest to stimulate motivation was held with the grade level winners spelling the words given them over the school's speaking system. The system piped this modern form of the "spelling bee" into the ten junior high-school rooms where students were invited to listen and to attempt to spell the words in writing as they were given. There was added effort expended in learning how to spell.

In business education the teacher of shorthand put lessons on tape each day. These were played in class. As the tapes were played the teacher was free to circulate in the class and help students having difficulty in mastering their lessons. Under the system of teaching without tape, the teacher must devote her attention to giving the dictation while students do not receive the assistance offered when tapes are used.

In science it was determined that films and filmstrips could strengthen instruction by "showing" what the teacher formally only was able to "tell." Also, more demonstrations can be given through the use of film than by the busy teacher who hasn't time to set up and execute frequent experiments. In one science class such aids were used forty-four times during the year. A before-after test design indicated students mastered the content to a more than satisfactory degree in this class. Through the use of up-to-date tapes, teachers can be aided in keeping abreast of the continually expanding body of knowledge in science. There are many other teaching machines we have researched and are anxious to use when it is possible to procure them.

Student Assistants

Our experiences with student assistants in physical education classes proved beneficial to the class and to the student assistants. Able and mature twelfth-grade students were selected to work with seventh-, eighth-, and ninth-grade classes. The student assistant gave demonstrations, checked role, and worked with individuals in physical education instruction. The teachers reported that the amount of progress was increased and the level of instruction was improved. The student assistants developed leadership characteristics and gained confidence in working with others.

In the business education department, students in a course in office practice were assigned one period a week to certain teachers. They had responsibility for recording information, filling out forms, duplicating materials, and constructing interesting bulletin boards. This was success-

ful. It gave valuable aid to teachers and, at the same time, gave students practical secretarial experience. Rating sheets were turned into the office practice teacher each six weeks and these were used as the basis of helping the students.

Student assistants were used with profit in caring for, using, and supervising the use of audio-visual equipment on all grade levels. Students were assigned to these duties on a daily and an hourly basis.

Curriculum Improvement

In mathematics an extensive study was made of the course content in grades 7 through 12. It was determined that, by rearranging the units of work, one additional year of mathematics could be taught in high school to above-average students. On the other hand, another type of student needed more drill and repetition on some units of work. By grouping students according to ability, these curricular adjustments could be made with profit to the individual students.

The teachers of English developed an extensive outline of content for three ability levels from grades seven through twelve. Each teacher took the total outline developed by the "master" teacher during the summer of 1959 and evaluated and revised it during the 1959-60 school year. (It is interesting to note that 286 requests for this outline have been received from all over the United States after publication of an article in *School Management* about Lakeview's English program.)

The kernel of success of this activity is the various departments' desire to improve instruction by working cooperatively on specialized learning experience selection.

Instead of each teacher formulating course content based on a general outline or on the provided text, the determination of instructional activity is made by an organized approach to content. Consideration is given to student ability, interest, previous background, attention span, and conceptional depth.

After this experience, it is felt there is no function more important for the professional staff to participate in regularly. This implies a desire to continue to do an even better job of learning experience selection and evaluation. Only in a summer workshop could such extensive course development be completed.

Where Do We Go from Here?

While the formal project is concluded, we have not ended our interest in better utilization of staff and in improved instruction. We will continue to seek new and better ways of teaching young adults.

The limitations of the physical plant at Lakeview, with its too few classrooms, with no auditorium, with its single size rooms, will impede progress. The added class load in 1960-61 brought about by increased population (we graduated 99 on June 6 and will take in 194 new students in September) will make the development slower than it should be. The unavailability of needed teaching supplies and equipment will likewise

hinder improvement. In spite of these factors, we will employ the human and physical resources to their fullest extent; and we will attempt to do an even better job for those we are privileged to work with in our classes.

The Instructional Revolution

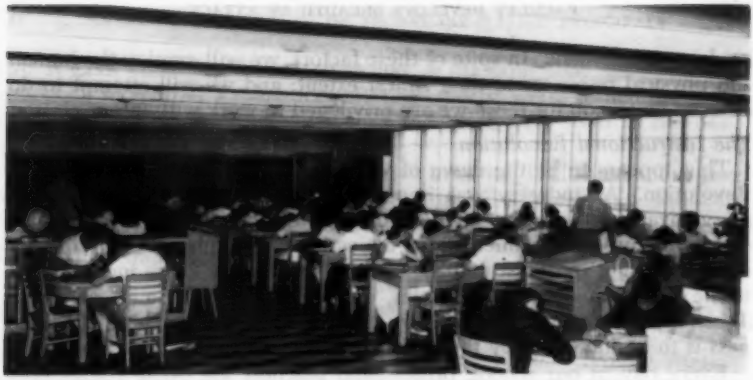
This appears to be the dawn of what may be called the Instructional Revolution. As industry was improved by the Industrial Revolution's reorganization of worker functions through the creation of the specialist and by the use of machines, so too education can be improved by the use of the teaching specialist and by teaching machines. These include electronic tapes, language laboratories, overhead projectors, and television. Teachers are not to be replaced by these devices, but teaching effectiveness is to be increased by their use in supporting the teacher's role.

Every day in our school, professional teachers are doing things non-skilled workers could do. Such functions include paper correcting, hall duty supervision, clerical work related to essential records, *etc.* From our investigations with the use of student assistants, we see no reason why sub-professional employees could not be added to the public schools with benefit to the instructional program and with a savings to the taxpayer by releasing teachers from clerical duties for more teaching. This is a practice long in use by the medical, legal, and engineering professions. Before any delicate operation, a number of para-professionals (nurses, technicians, *etc.*) have prepared the patient for the specialized work of the physician. We believe there is an application of this principle of division of labor for education. Teachers should teach; clerks should work with records; recreation specialists should develop co-curricular programs.

A number of machines have been developed to aid in instruction. These include language laboratories in which students can learn by listening to master teachers on tape. The students can practice and hear their own word selection and pronunciation on the same electronic tape. Another machine recently developed is the question-answer machine which flashes questions and then answers for student use. Reading instruction machines used with regularity can improve this vital skill.

The eye and voice of television have just begun to be harnessed for education. Lessons presented by master teachers and visual presentations on television strengthening class instructors can enhance a student's experience.

The new interest in course construction development by a profession sensitive to how people learn is the most important sign of the Instructional Revolution. We only are at the dawn of understanding how and why people learn. The interest of education in what is useful for effective living is just being defined. Now that we have all but realized the great American dream of universality of educational opportunity, our attention is turned to the pursuit of excellence in education. Staff utilization and instructional improvement interest are signs of this new direction in the Instructional Revolution.



Teacher time is saved in Mattoon, Illinois, by giving an exam to the entire U.S. history group at one time in one place.

The junior high-school spelling bee at Lakeview High School, Decatur, Illinois, is piped into 10 other rooms for other pupils to hear. Janis Cole, left, is a seventh grader and junior high champion.

CHAPTER X

Mattoon, Illinois, High School Tries Team Teaching and Science Orientation

H. A. CLAWSON

THESE studies, representing two entirely different kinds of projects, were begun for the purposes of finding better ways of teaching subject matters already being taught, and to bring new understandings about an area (science) to students not normally enrolled or interested in that area.

TEAM TEACHING

The team teaching studies centered originally in an English group of tenth-grade students. We hoped to find, through the team approach to the teaching of English, a better method of accomplishing teaching-learning goals, a time-conserving method of teacher presentation, and a more efficient method of grouping students for greater learning of subject and skills.

The "group" consisted of three classes of sophomore English students scheduled simultaneously and filled by random selection, and three individual teachers who were volunteers and had been chosen carefully. The entire group assembled in the library to receive an introduction and overview to each of the various units of work throughout the year. The members of the teaching "team" rotated the responsibility of presenting the unit to the group according to their individual talents and tastes.

A pre-test administered to the group became the prime basis for dividing them into the three sub-groups for instruction in the work of that unit. Naturally, the work of the unit was interpreted in a different light for the upper group than it was for the lower group, for example. Again, the teaching-team members assumed leadership for the high, average, or low group according to their individual interests, capabilities, and also to normal rotation procedures. The students were never considered blocked in a sub-group but could, and many did, move as their motivation and actual mastery of the material in hand progressed at an accelerated pace, or bogged down unsatisfactorily. Obviously, they were not blocked from unit to unit either, as each new unit of work precipitated an assembly of the group with preview, pre-testing, reassignment to sub-group, and so on. Thus the tenth-grade English course was administered for these particular students.

H. A. Clawson is Principal of Mattoon Senior High School, Mattoon, Illinois.

The second year of the staff-utilization study included an expansion of this team-teaching to three groups of English, plus the addition of similar groups in American history, senior economics, and girls' physical education. Basically all these experimental programs were organized in much the same way, conducted with similar procedures, grouped in like fashion, taught in related ways, and for the same goals; *i.e.*, to determine if the team approach to teaching increases the effectiveness of teaching and staff utilization while maintaining at least the present level of learning being achieved.

To be accurate as, and where, possible, it must be pointed out that grouping was accomplished somewhat differently in history and the economics. Those two teams determined their three sub-groups each, for the year, on the basis of a standardized test given at the outset of the year. Youngsters could and did, again, move from group to group as the work progressed, but were not re-grouped at the start of each unit. In the girls' physical education, 93 junior and senior girls composed the group, and grouping was determined by physical fitness levels of low, medium, and high. This was established by a series of tests in each of the following six areas: leg strength, arm strength, abdominal-back strength, endurance-power, balance-coordination, and agility-flexibility. Three tests were given to each girl to determine her first grouping for each of the six areas. The results of each test were scaled to determine the range for each sub-group. From the results of the testing in the first three weeks, the first grouping for each of the six areas was determined. This enabled the team to try ideas of homogeneous physical fitness grouping and method in instruction by matching skill levels to skill activities. A different activity best suited to the needs of each group was more successful than having three levels of one sport scheduled simultaneously. For example, the low level in leg strength needed an activity which required extensive leg movement. Therefore, they chose running relays and soccer type games as the appropriate activities. Because the medium group was at a higher degree of leg-strength development, the team selected speed-ball and speed-away, which combines leg strength with hand-eye coordination. The high group was given field hockey, because it requires not only leg strength, but hand-eye coordination, and the added responsibility of handling a hockey stick.

After participating in a particular group for three weeks, the group was retested in the three tests for that area and then re-grouped according to standards established by results on the first testing.

Limitations and Considerations

Naturally these programs do not represent complete success or final answers. To look at some negative factors; to survey the limiting conditions is to round out the picture for all to consider. For example, student opinion on the "changing of teachers" varied. Many never quite accepted this procedure and one team of teachers conceded that there were too many wholesale changes in it's particular course of work for the year.

The problem of evaluation of student progress is one of the greatest, enhanced by the changing of students from teacher to teacher during the course of a grading period. Another great, in fact, overwhelming consideration is the limitations imposed by the physical properties involved. Classroom sizes, locations, proximity to other rooms in the same group; the need for the use of a large enough room to hold the entire group at once; the need for rooms suitable for film and related material are all vital considerations bearing a lot of the responsibility for success of such a program as team teaching. The library, which was used by our groups, is not equipped to provide the necessary services demanded by this program. To use it as often as necessary for all the groups in the research project seriously hampered the services of the library to the total school. To further encroach upon our library would be unthinkable.

Our teacher teams, of necessity, had to meet in odd places for their planning and coordination of sub-groups. A physical plant fitting their needs would have to provide office space, ample files, classrooms fitted for film, intercommunication, and flexibility both as to numbers of students and nature of activity. Another great need is more flexibility in the daily work schedule of team teachers. Their individual time in planning and presenting work will flow and ebb as their individual responsibilities to a particular group shifts through the units of work.

In physical education, where numbers are larger than in standard classrooms, the teachers felt a pronounced decrease in the personal relationship and understanding between teacher and student. Many of the physical limitations outlined above were not so critical here, as the space and facilities provided, indoor and outdoor, were adequate at least.

Despite our being in the program two years, we still underestimated the need for public relations; the need to tell the full story to students and parents before starting the year's work.

Results and Measures of Success

There certainly are some results to report, most of which are measures of success. Though individual teacher's reactions varied considerably and naturally, the wholehearted response to the team approach is most highly favorable and positively stated. The senior economics teachers stated simply enough, "We are much in favor of this team approach to teaching." The history teachers report, "In general we felt the classes were a success." The English teachers went into more detail. They felt that the transferring of students is beneficial to the students and allows the teachers to proceed at their particular pace for the particular group that they are teaching.

The physical education team has recommended to the administration that their program be continued and expanded, and this newer program of teaching is currently leading them into a new physical education handbook which will be available for this coming school year. This method of instruction actually increased the amount of teacher planning and preparation for the first year, but they report the time and effort were

very well spent and profitable to teacher and student. It was particularly gratifying to the team "to see instances of girls' success which was recognized by the girl and the entire group."

All teaching teams have recommended that this program be continued, and it will be under "our own steam," so to speak. While experimentation never stops, we feel we are on solid enough ground here to consider this type of program as basic and approved.

A very substantial measure of success is teacher time saved through assembly of the entire group during a unit of work, for a lecture or film or other type of work best suited for the entire group. A record kept by the English team shows that their team members gained a total of twenty-four class hours of time for planning and preparation; by utilizing the group structure.

Running through the teachers' evaluation of the program are certain key comments. It would seem definitely established that teachers gain enthusiasm from working closely together on a team, and are given a better opportunity to benefit from the close association such an arrangement provides.

It would also seem definite, in the minds of these staff members at least, that motivation on the part of the students is enhanced to a much higher degree through the sub-grouping and the realization that one can move—up or down.

Another fact important here lies in the fresher and more critical appraisal these teachers are making of their own teaching methods, the texts and related teaching materials, the audio-visual aids they chose, and their evaluation of student progress. One English teacher has become so stimulated that she has resigned to continue her education.

Despite the inadequacy of results on standardized tests as a "measuring stick" to bear out the remainder of the hypothesis, some results are shown.

CHART I

Comparison of Experimental Group in English with National Forms-*Essential High School Content Battery*-English Section

	National Average	*Experimental Groups*	*Comparison*
Fall Testing.....	AM 139.63	135.54	− 4.09
Spring Testing....	BM 139.63	150.30	+10.67

CHART II

Comparison of Experimental Group in English With National Forms-*National Achievement Literature Test*

Average Score Gain—National Forms.....	3.0
Experimental English Classes.....	2.9

These tests often did not correlate with the text, the course content, or teaching goals; but perhaps they are helpful if limited.

Chart I and II show that the experimental sections of English either gained more than the national average gain, or nearly as much as the national average, as measured by two standardized tests. In the senior economics experimental sections, a worth-while gain is noted. Based upon results from the *American Cooperative Government Test,* the experimental group average gain from fall to spring testing was 33 percentile points, while a control group under the same teachers had an average gain of 21 percentile points. As the experimental group was quite low on the basis of fall testing, this increased gain for them resulted in their reaching, or slightly surpassing the control group.

Perhaps the best way to portray results in the physical education experimental program is to show, Chart III, the progress of students from lower-level groups to higher-level groups by the before and during testing.

CHART III

Progress of students in physical education from group level to group level, as determined by testing before the unit activities, and retesting after three weeks of work.

Number of Students	*Unit I Leg Strength*	*Unit II Arm Strength*	*Unit III Abd. Strength*	*Unit IV End Power*	*Unit V BalCoord*	*Unit VI Agilflex*
60						
50						
40						
30						
20						
10						

Low Ability Group.....
Average - - - - - - -
High _____

The girls did improve upon their basic strength, agility, endurance, coordination, and the other measured criteria of physical fitness as substantiated by the numbers progressing from lower groups upward, as shown on the chart.

Conclusions

Based upon the various teaching team reports, scores from tests, observations by professional persons on the teaching teams and others, and student ratings, the only valid conclusion that can be established

is that there is a great amount of merit inherent in the team teaching approach in secondary education. The basic hypothesis is true; the team approach to teaching in this particular set of circumstances did increase the effectiveness of teaching, and maintained the present level of learning.

Summary

Mattoon Senior High School conducted an experimental group of tenth-grade English classes during the year 1958-59, under the direction of a team of three teachers. The program was so well accepted and successfully conducted, that in 1959-60, the team taught three groups of tenth-grade English. Also taught in quite similar fashion were groups in American history, senior economics, and girls' physical education. Without exception, every teacher directly involved in the team teaching had words of praise for this procedure. Despite the limitations and drawbacks, the additional time demanded at the outset for planning and coordination and the problem of grading and shifting of students, the staff members wish to acknowledge formally the potential gains and advantages inherent in this plan. Perhaps the best way to convey the sincerity of their convictions is to report that, in every area, these staff members have asked for this type of procedure to be continued and expanded. This in view of the fact that, as a group, they are no longer on a subsidized or experimental basis, but are to continue to improve their programs on a regular school basis.

Science Orientation

This experimental program began with the 1958-59 school year. Twenty-five eleventh-grade students with no professed scientific interest were invited to hear an hour lecture per week on some aspect of science. The lectures were presented by members of our high-school staff, who because of special training, interest, or ability could broaden the experiences of these students in the area of science and could help them see the impact of science on their lives. For the majority of these students, this would be their last formal contact with the subject of science.

Hypotheses

1. "Non-Science students will enjoy and be interested in well-presented, interesting lectures *about* science.
2. Scientific attitudes can be developed.
3. These lectures will serve as a means of *orienting* students about science and the impact of science in our everyday living.
4. This orientation is *not* designed to produce scientists, but rather to prepare a student for living and working in a scientific age.

Procedure

1. Students were to report for one hour each week.
2. There would be no required homework, only suggested reading and reference materials.

3. They would not receive a grade, only one-quarter unit of credit.
4. They would evaluate each lecture.

The experimental project was continued through the 1959-60 school year with very few modifications. We chose the majority of our students from the tenth-grade "non-science" students with a few eleventh-grade students. One person was placed in charge of the group with the idea of better coordination and correlation of the various topics. The lectures were spread throughout the entire school year, with breaks between lectures for the coordinator to provide time for discussion and reflective thinking on the part of the students.

After completion of the second year and with the results of our testing and observations in, we are well pleased with them. The students do enjoy these lectures. They gain a good deal of insight into the workings of science. This we know as a result of the *Sequential Test of Educational Progress* measures. During both years we see a significant gain. The level of significance being .011 as determined by the *Sign Test*. We in education are prone to think of concentrated dosages of subject matter and educational material, but for something like this the students really enjoy and prefer that it be spread out over an entire school year, meeting once a week. I was sure the interest would lag as the year wore on. This was not the case. Each new teacher with a new and interesting presentation on some phase of science was well received.

The critical evaluations made by the students were used to plan the future lectures, and served as an excellent way to point out the *good*, and the *poor* teaching techniques of the teachers. I would recommend this program for any size school as an enrichment program for those students not going into chemistry, physics, botany, or zoology. It seems best fitted at the tenth-grade level. I might add that the staff members invited to lecture were motivated to do some outstanding teaching. They had several weeks to prepare *one* lecture, complete with visual aids, demonstrations, and experiments. Such a project gives teachers an opportunity to give a very outstanding performance. It results in better informed students, more able to live in the world of science.

CHAPTER XI

Newton High School, Newtonville, Massachusetts, Completes Four Years of Large-Group Instruction

HENRY BISSEX

FOUR years of Newton Plan have been characterized by such extensive adaptation and modification in response to local needs that a mere history of the "Plan" would have little unity of meaning. The outcomes have been so woven into the fabric of the school that much of any history would be the history of the school itself.

But beyond the fact that four full-time lecturer-supervisors are now in existence, and beyond the inevitable coordination and definition of curriculum, there are two observable outcomes attributable to the experiment itself. One is the wealth of technical information and the other is the number of lectures now part of the education program. Accordingly, this report, rather than attempt a comprehensive "big picture," offers the following *technical index* and the following *schedule of lectures* for the information of the many schools now undertaking experiments in varied size classes.

TECHNICAL INDEX

This index is a summary of technical information about preparation and presentation of large-group sessions. The index does not contain information about programming, course of study research, the roles of the professional staff, or broad matters of space and compensation. This index is simply an alphabetical catalogue of bits of information about production and delivery of lessons to large groups.

The alphabetical arrangement of the material is at times inconvenient, but this arrangement allows for access to fugitive bits of information that can make a difference in the preparation and delivery of lessons.

Special attention is given to techniques of overhead projection, the basic mechanism of lecturer support. Audio-visual aids specialists can quickly direct the reader to suppliers of the materials mentioned.

Animation of overhead projection visuals is one of the resources of the lecturer. The methods of animation are (1) polarization, (2) manual, and (3) actual. Polarized films at the light-table surface can be "activated"

Henry Bissex is a Teacher-Lecturer at Newton High School, Newtonville, Massachusetts.

by rotation of a polarized lens attached to the lens of the projector. Special materials are required, therefore, to get the effects of directional flow, pulsation, and concentric flow. Manual animation consists of hand movement of transparent or opaque elements at the light-table surface. Actual animation consists of the projection of chemical action, insects reacting to irritation, *etc.* (See "Projection Techniques.")

Ceiling height (See "Installation.")

China-marking pencils, or grease-pencils, are the basic implements for writing on plastic sheets. These are wood, peel-down paper, or automatic pencils taking the china-marking leads. Experimentation will lead to the choice of kind, but white leads should always be specified. The image from the white lead appears black on the screen. The white lead eliminates dirt transfer to the lecturer's hands. Buy them in dozen lots so that there will always be an ample supply. At present, only two other implements seem to any degree satisfactory for writing on plastic. One is the felt-tipped marker, the other is the All-Stabilo grease-lead pencils #8008 manufactured by Schwann, Germany, but this last has not been found completely satisfactory for general use.

Composition of lessons varies from person to person, of course; and it should. But some suggestions about the production and organization of lessons for large groups may be helpful in speeding the thinking of others about this complex subject. One lecturer, Henry Bissex, uses five checkpoints for lessons:

A. *Begin at once.* Get to a "for instance" immediately. The advantage here is that the pupil has something specific to which to pay attention. His first impression is one of "something to be learned." By the time he has settled into organized attention, the lecturer may have begun on a more organized presentation or in building the context in which the arresting "for instance" has a place. For example, in the teaching of punctuation, the first thing the pupil sees is a passage of great complexity, a passage needing punctuation. He is invited to try his luck. He learns almost at once that he does not know everything about punctuation.

B. *Motivate.* The "begin at once" example of the passage to be punctuated is a sample of motivation early in the lesson. Motivation varies from lesson to lesson, but it must always be reasonable, intrinsic, motivation, not a vaguely related "gimmick." In the instance of the punctuation lesson, the motivation problem is to convince pupils that they are going to learn some punctuation that they did not know before they came in. They know that they have had punctuation many times before. *Their* question is "Am I going to learn anything new?"

C. *Control sequence through visuals.* Throughout the lesson, visuals punctuate the experience. They emphasize, restate, test, list. The visuals are not the speaker's notes, but they are a flexible outline of content. They allow for extempore dialogue precisely because what is on the visuals cannot be made up out of hand and is not appropriate to speech or printed sheet.

D. *Vary pace and activity.* What are the pupils doing? What problems is the lesson presenting to them? These two questions must be constantly in mind. Dramatic presentations aside, the lesson must take into account the fact of

wandering attention from time to time. The lesson must consistently offer opportunities for the pupil to get back on the track, if he has wondered off. Visuals, lack of visuals, printed sheets, questions asked orally, check-tests seen on the screen, and printed check-tests—all of these, or many of these, must be in balance during the lesson. Pace does not mean speed alone. The best pace change is the shift to depth of consideration of one element of the subject. The lecturer has time to prepare materials that make depth possible.

E. *Provide for action.* The lesson need not contain an assignment for pupils to do. But if the emphasis is to be on helping the pupil, constant reference to applications is the responsibility of the lecturer. Normal provisions for action include materials supplied to the regular teacher. But these are not merely tests with keys. They are also kits for disagreeing with some of the things that the lecturer has said, kits that make it easy for the regular teacher to maintain his own authority in the field. Obviously, the lecturer does not cover the entire field; or there might be points of view that may be argued. In general, the content of the lecture depends for its success on usefulness to teachers and value to pupils. It is not merely something to be "followed up."

Another approach to the composition of lessons may be gleaned from this "diary":

1. A general notion of the idea, lesson, principle to be presented.
   a. Work with the materials, sketching or visualizing visuals, continuous probing of purposes
   b. Attempts at more than one expression
   c. The mind open for sub-points, for new directions, for analogies
2. A gradual accumulation of units of the presentation, of visuals, some in sketch, some in the mind
   a. The feeling for continuity, for "wholeness" now consciously made dominant. Poor transitions, forced transitions are analyzed and eliminated. The entire lesson may be reconstructed as a result of the analysis of transitions.
3. A feeling of "enough"
   a. Cutting some visuals that seemed good in earlier stages, but are not up to date with your latest thinking. Always try, but readily discard. Investment of time and money in a visual does not call for its use *in this presentation*, necessarily. Maybe you were working something off or out that will be of use in some other context
   b. Order, think again of order. Think of the poor pupil out there. What are you going to make happen to him? Is this going to be the sea washing over him, or will it be an adventure that will teach him? Change the order of your visuals. Add the few that are missing.
4. Dry run this with an audience. A few critics are better than many, who may generalize and lose helpfulness. Good critics should be asked to look for smoothness of transition, for emphasis, for clarity of what it is that is to be understood, appreciated, known, and done as a result of the presentation. Be open to suggestion, but keep your own counsel, too. This is not a mathematics problem on which you are working.
5. In cases of severe difference of opinion about presentations, remember: "What's the difference whether they're wrong or you're wrong?"

In any event you must prepare your illustrations, visual or verbal, and the general ideas that you value will take care of themselves. Remember, too, that the time you have to prepare may lead you to overload any one presentation. Richness of a lecture, depth of content is more appropriate than the fact-packing of our textbooks. You are trying to teach, not to be a living textbook. Think in terms of what will be in the pupil's mind as he walks from the room. Think

also of what will be in his notebook. You had better provide for repetition and for summary, too, since no pupil pays solid attention for forty-five minutes.

Compositions written by pupils may be transferred directly to film by the photo-reflex process. The teacher discusses the work of individuals in the presence of the class, marking the paper with china-marking pencils just as he might mark it at his desk at night. Existing opaque projectors are inadequate in light output for large group instruction.

Control of large groups comes through solid, learnable material effectively presented. Control comes partly through giving pupils a clear understanding of what is minimally expected of them; namely, that they are to take notes for every large group presentation. If you put a pupil out of the lecture room because he is not taking notes, you never have to put him out for talking. We expect better-than-classroom level of attention.

Drop-on: another term for "overlay."

Filing of visuals is not a problem in early stages, but, in the second or third year, a store of a thousand or so transparencies cannot be filed by memory. We suggest grouping slides by subject (or teacher) and storing them in cabinets. If each transparency is also numbered (small stick-on photographer's numbers are handiest), then a cross-index 3 x 5 card file will help locate "missing" slides. Some lecturers code-identify each transparency at the time of production. Always put date of production or revision on each slide.

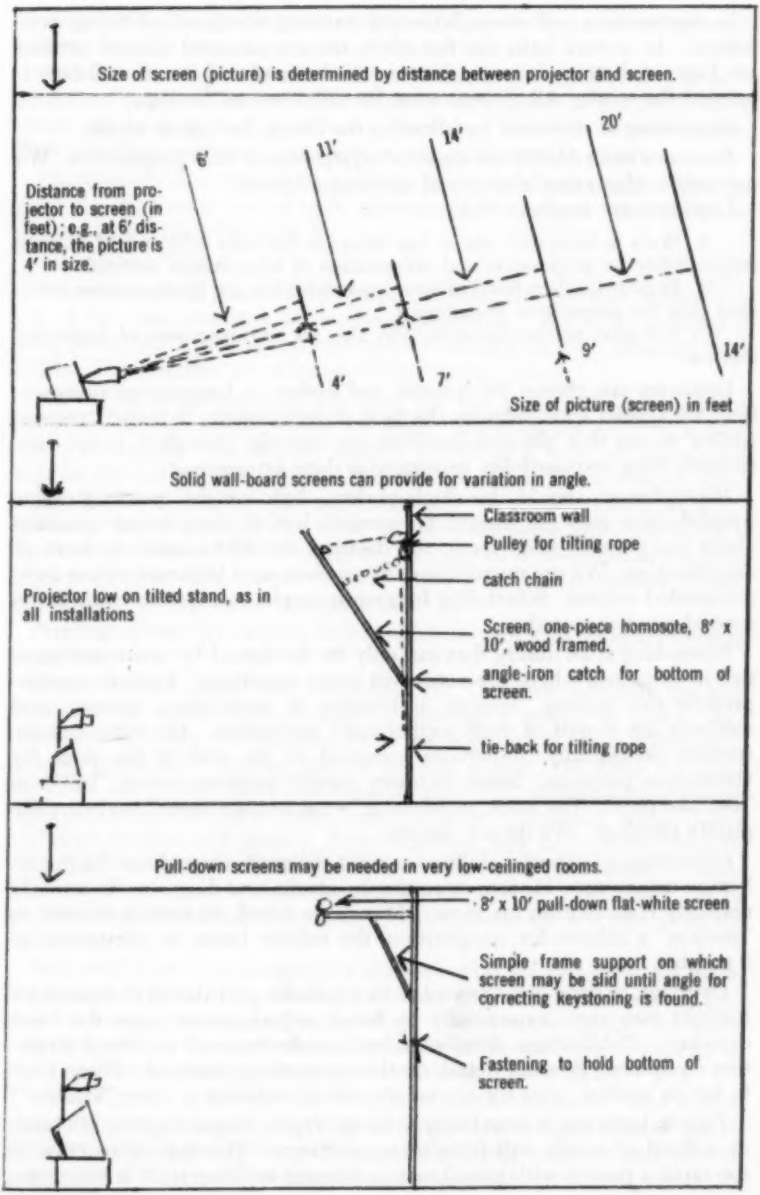
Grease pencils (See "China-Marking")

IBM Executive typewriters fitted with Directory typeface are excellent for labeling and production of text. Some would say that it is too tempting, likely to facilitate the overloading of words on the screen. This is a danger. The typewriter should be fitted with nothing but a #5550-2 ribbon. This is an acetate ribbon that deposits all of its carbon on the translucent master. Certainly no typeface smaller than Directory should be used for normal viewing. Use *expand* key and triple space.

Installation of overhead projectors is essential to their efficient use. The machines can be lifted; that does not mean they are conveniently portable. The information under "Screens" in this index will suggest how the projectors will be best installed. All notations in this index refer to the installation and use of overhead projectors with 10 x 10 inch light-table surfaces. Anything smaller than this is difficult for the teacher to work on.

The specifications on the following page are for installation of an 8 ft. wide x 6 ft. high screen at the front of the room. Keep the bottom of the screen a good four feet from the floor. This is the *normal classroom installation.*

In lecture halls, our minimum screen size is 10 ft. wide x 8 ft. high for a 90-seat room (the ceiling does not permit a larger screen); in the assembly hall seating 1,000 we have a 12 x 12-foot screen, but do not expect last rows to read lettering made on the IBM. In our 200 seat lecture hall, we have a 14 x 14-foot screen. Image size on this screen permits use of Directory typescript. (See "Size of Screen.")


Size of screen (picture) is determined by distance between projector and screen.
Distance from projector to screen (in feet); e.g., at 6' distance, the picture is 4' in size.
6'
11'
14'
20'
4'
7'
9'
14'
Size of picture (screen) in feet
Solid wall-board screens can provide for variation in angle.
Projector low on tilted stand, as in all installations
Classroom wall
Pulley for tilting rope
catch chain
Screen, one-piece homosote, 8' x 10', wood framed.
angle-iron catch for bottom of screen.
tie-back for tilting rope
Pull-down screens may be needed in very low-ceilinged rooms.
8' x 10' pull-down flat-white screen
Simple frame support on which screen may be slid until angle for correcting keystoning is found.
Fastening to hold bottom of screen.

In classrooms a pull-down flat-white screen is adequate, all things considered. In lecture halls the flat-white tension-mounted framed screens are best. A better classroom screen can be made of 8 x 6 wall-board, painted flat-white. All screens must be tilted out at the top.

Keystoning is corrected by allowing for tilting the top of screen.

Knives or razor blades are essential equipment in slide preparation. We use single edge razor blades and architects' knives.

Lecturers are teachers who:

A. Work in team with one or two others in the same subject field, sharing responsibility for preparation and presentation of basic course material.

B. Regular teachers freed of some responsibilities and given summer workshop time for preparation of materials,

C. Full-time teacher-lecturers who also act as supervisors of beginning teachers.

Lecturers are chosen for interest and ability in large-group presentation, for special knowledge in the field of lectureship. It is their responsibility to see that physical facilities are suitable, though it is not consistently their responsibility to supervise their arrangment.

Microphones should be high-quality, light-weight pendant type. Amplification may not always be needed; but, if there is any question about the possible need for it, the decision should be made in favor of amplification. We use microphones as much to save lecturers' voices as to get needed volume. Scheduling frequently results in a lecture being given several times in one day.

Notetaking is an ability that can only be developed by consistent practice in situations where the notes will mean something. Lecture sessions provide this setting. Specific instruction in note-taking systems and methods are a part of each sophomore's instruction. His notes are inspected periodically, sometimes collected at the end of the hour for attendance purposes. Some lecturers supply outlines (never "full") to "aid" the pupil. The basic problem of "what to take down" is always the pupil's problem. We do not dictate.

Observing, as a special ability, is taught obliquely throughout the pupil's lecture experience. He sees more graphs, charts, and diagrams than would normally come within his view. He may be asked, in writing lessons, to "analyze" a subject for composition, the subject being an illustration or a graphic.

Overlays, or drop-ons, are visuals in which the parts being discussed are brought into view sequentially by being superimposed upon the basic drawing. (Publications distributed by manufacturers of overhead projection equipment give full details on the range of applications. There seem to be no special rules for secondary-school lecturing.) (See "Visuals.")

Pace in lecturing is most likely to be too rapid. Rapid flipping of visuals or a flood of words will irritate any audience. The normal reaction to too rapid a pace is withdrawal, not an attempt to "keep up." It takes time

to "read" visuals. The larger the class, the greater the need for dramatic timing.

Pens for drawing with india ink on tracing-paper masters should be in abundant supply. The #5 Speedball or equivalent is the most useful single nib because it gives a heavy black line that will be easy to read. Fine pen-lines wash out in projection, and sometimes in printing.

Photographs are difficult to produce since the diazo process does not print the gray-scale except with photographer's screens. Use 35mm for photographs. (See "Visuals.")

Plates (See "Visuals.")

Pointers made of plastic or of opaque material are essential to maximum use of the characteristics of overhead projection. We make pointers of clear plexiglass with colored arrowpoints bonded on with ethylene dichloride. The pointers are polished with jewelers' rouge.

Presenting a lecture calls for time for the lecturer to assemble his materials and check the screen for focus. The formula CPP^3 is a good one to remember. The lecturer needs a soft *Cloth* to wipe off china markings on the visuals. He needs a *Pointer*. He needs *Three Pencils*, china marking: one to lose, one to lend, one to use. He needs to check his watch so that he and the period can finish at about the same time. He needs to check amplification, if he is using it. He may have instructions for some pupil assistants. The lecturer operates the over-head projection system. Pupils pass out papers, bring aspirin, *etc.*

Printing of visuals is a topic well handled by publications of commercial suppliers.

Projection techniques vary in complexity. The most elaborate are least used, but the possibilities include: projecting a guppy in water, then showing irritability (a characteristic of protoplasm) by an eyedropperful of acid; projectable working models of clear plastic (the Army has some elaborate ones). We have a projectable slide-rule. Mathematics can get some 3-D effects by use of color, line, and level or angle of visual. Clear plastic protractors will project. Basic drawings may be projected directly onto the blackboard. Clear plastic symbols have been used to show relations of government departments. Fluids project. Compasses can be used on the light-table if two sheets of clear plastic are first placed on the light-table.

Basic techniques are progressive disclosure by use of cardboard mask; progressive disclosure by removal of masks on parts of total visual; progressive build-up of a visual by overlay. The principle is that the pupil is looking only at the part under discussion at the time you want him to see it and for the length of time you want him to look at it.

A reading pacing device may be placed on the projector. The device passes a bar over the projected text at variable controllable rates of speed. We have used it to break word-by-word reading patterns and also to give pupils a notion of how fast they are reading.

Simultaneous projection from two light sources to the same screen may be the answer to some uses of 35mm slides. The heading or text, printed on strips of diazo film, if projected through a one-inch opening at the top of the covered projector table allows 35mm slides to be projected onto the remainder of the screen.

Combination of 35mm and 8 x 10 diazo slides may call for two screens to get maximum use from the two devices. The diazo transparencies may show schematic or outline characteristics; the 35mm ones are good for full color "reality" illustrations. In a history lecture, a 35mm photo of an old print of the Thames London area was projected while the instructor worked at the overhead projector on a diagrammatic clarification of the 35mm shot.

Compositions may be written in class by pupils. Use clear plastic sheet with composition-page lines printed on it. Pupils write with china-marking pencils. A few extempore "papers" analyzed may clarify the assignment for the pupils and show them, *in advance of home work*, at and for what the instructor is looking.

Projectors are constantly being improved; hence, it is dangerous to describe "best" characteristics. Schools should try out competing models before making wholesale investments. However, the 10 x 10-inch light-table models will certainly be found most useful by teachers. This size has the additional advantage of allowing the most light at the shortest projection distance.

Publications are many, but three which are helpful to beginning workers with overhead projection are, at this printing:

Diazochrome Slides for Visual Communication, Tecnifax Corporation, Holyoke, Mass. 30 pp. (Free)

Transparency Preparation Methods, Central Film and Equipment Exchange, Third U.S. Army, Fort McPherson, Ga. 19 pp. (Single copies on request)

Vu-Graphics, a Manual on Vu-Graph Projection, Charles Beseler Company, 219 South 18th Street, East Orange, New Jersey. 36 pp. ($1.00)

Pupil activity: The use of the term "lecture" may be a bit misleading. The term "presentation" has visual overtones, a flavor of the specific not clinging to the word "lecture." "Lecture" further suggests that a good portion of the audience is asleep. However that may be, the lessons we want have in mind what the pupil is *doing*. Conventionally sized groups can be "orchestrated" with more facility, with less preparation, than large groups. Therefore, large-group instruction needs to keep in mind the full range of pupil activity:

A. Pupils *observe:*

1. Graphs, charts, pictures to be interpreted ("read")
2. The tone of the meeting, the importance the school attaches to the business at hand, the attitudes of teacher and pupils
3. Samples of work of fellow pupils; the teacher at work correcting papers
4. Some connections between parts of their courses and work in other fields

B. Pupils *listen:*

1. To carefully organized, rehearsed presentations
2. To consciously good illustrations of spoken English

C. Pupils *take notes:*

1. Every lecture is a note-taking practice session
2. Pupils are responsible for "getting" what is presented
3. Notes are inspected, sometimes collected during the term, sometimes collected after the lecture hour, sometimes informally inspected during the lecture itself
4. Pupils take notes from outlines on the screen; fill in outlines supplied by the instructor; take notes without any support; take notes from oral summary

D. Pupils *answer questions:*

1. Directly asked by the instructor of individuals
2. Asked rhetorically by the instructor
3. Put on the screen as check, self-corrected tests, the answer to which may be put on the screen that same lecture hour
4. By choral response

Pupils *ask questions,* but this only rarely. The large-group session is one in which material is presented, not discussed. For example, we do not "discuss" what the formula for glucose is or how business letters are headed. Pupil opinions on these matters is often worse than useless. The discussion, amplification, checking, individual adjusting work of the small section, cannot be replaced.

Given this range of pupil activity, it is still difficult to determine, during the course of the presentation, the understanding being achieved by the pupil. This is difficult even in small sections, where it is assumed that the teacher asks pupils to find out. In large groups, the presentation of inspirational and mechanical material—the two extremes of the teaching spectrum—seems to go over best. The reason for this is partly that pupil understanding is, in the case of inspirational teaching, guessed at by the breathing, general attention, grunts, laughs, *etc.* that signal the teacher-actor. If the subject matter is mechanical, then it is either coming too rapidly or too slowly, and this rate can be guessed at simply by observing writing and attention level.

Reading: Books with sight-saver print may supply text for reflex copying. The reading pacer mentioned in "Projection techniques" can be passed over this material. The image is likely to be on the small side, however. As always with the use of visual (that is, screened text), short exposures are the rule. Ten to fifteen minutes of a period would seem to be about right for the training session aspect that the film or overhead projector supplies. *The real practice comes in the transfer of illustrated techniques to the book or sheet in front of each pupil.*

Screens: The best screen for overhead projection, or for any projection where side-angle viewing is necessary, is a flat-white screen. Beaded screens give a brilliant image at the center of the room, gray and dim

images at the edges of the audience. In classrooms this is bad because the instructor stands in an "ideal viewing" position, center, and is likely to forget that, at the sides, pupils are not seeing what he sees. Flat screens have less center brilliance, but they have better brilliance on the sides than the beaded screen. For ordinary classrooms, pull-down screens may be used, but painted wallboard screens mounted above the blackboard are better. Our pull-down screens come to the center of the chalkboard. For auditoriums or lecture rooms, tension-mounted screens or wallboard screens are best.

Type size: No compromise with size of image should be consistently allowed. If the screen image size "must" be small, investigate other means of reproduction, such as photo-offset where the cost may be under $10 for 500 copies, or the conventional mimeograph or hectograph.

Typewriter (See IBM.)

Visuals and visual production techniques summarized here may overlap mention elsewhere (in "Publications"). But these are methods we find useful occasionally. Following is a general summary of processes we have used:

A. Clear sheets of mounted plastic (usually pale blue or yellow) to be written on during the lecture with china-marking pencils.

B. Rolls of clear film with colored plastic sheet (yellow or pale blue) underneath to cut glare and cardboard mount taped to the machine to give a frame to picture. This is for extempore writing, the use of the projector as a simple blackboard where the material is cranked off the light-table stage and brought back for review at will.

C. Overlays: these drop on elements of total visual, one at a time.

D. Disclosures: these peel off black masks, exposing one element at a time.

E. Reversals: (See "Reversal" below.) This is color on black field for dramatic effects and for eye-saving visuals.

F. 35mm slides.

G. Photo-enlargements of line pictures and text. These may be reflex copies of the enlargement.

H. Reflex copying of maps and enlarged drawings or text. Photographic techniques play an increasingly important part in visuals production.

1. For halftone photographs (8 x 10 size) use sheet film, contact methods. Result can be used directly for overhead projection.

2. Enlargement of line-cut reproductions and text is accomplished with 35mm film transparency projected onto photo paper (extreme contrast); then these are used in the reflex copier to make a transparency. The transparency may be projected or used as an intermediate for color-overlay transparency.

3. The photogram has been used in conjunction with the reflex process to get backgrounds of decorative interest. Window screening, copper-form discards, reed screening are some of the materials used for these background effects.

4. Reversals may be made with special reversing film, an intermediate film exposed like diazo film but for a shorter time, then developed in ammonia, then washed and used as a master. Reversal lettering can be produced if the drawing or lettering

is done in chalk. A brayer is rolled over the paper. After drying, the paper is tapped on the rear side to remove the chalk. The india ink of the brayer has blacked out all but the chalk area. Reversing typescript or printing is also possible if a good grade of tracing paper is used for a master. This is used as a negative with extreme contrast contact paper. The developed print is used in the reflex copier to produce the reversal. Reversals made from the reflex copier negatives are possible, but they are likely to be too expensive because of waste and difficulty in getting a satisfactory, "clean" print. Reversal is also possible if paper letters, lightly glued to tracing paper, are rolled with the printer ink brayer. The letters are peeled off and the result used as a master.

For a soft edge on a color border, as for a clear center surrounded by a soft-color border, fasten a toothed-edged aperture to the printer and move the diazo film during the exposure. Mounting of visuals can be done with inexpensive tape of any kind, but, for overlays, a good quality cloth tape or special hinges will be needed to take the repeated folding and to assure flat-falling overlays.

Voice: The emphasis on what is seen may lead to some inattention to that all-important and variable instrument: the voice. The larger the group, the more need for dramatic intonation—as a rule. Few people succeed in being chatty with large groups. Normal classroom techniques of the personal dialogue with one pupil and of the trenchant aside are out. The dialogue will merely give rise to "Wuzzat, wuzzat?" at the back of the group. And asides, no matter how clever, are certain to be lost. Clearer enunciation and greater attention to emphasis, especially to rate and to final sounds, become increasingly important as the group gets larger. Do not shun the microphone if the audio system is good. The speech consultant should be regularly assigned to work with lecturers.

1959-1960 Newton Plan Lectures

The following schedule does not include the daily teaching of typing. All personal typing is taught to groups of seventy with use of overhead projection and tape recordings. This schedule also does not include the daily use of overhead projection in five regular math classrooms.

The following schedule shows, in tabular form, the department, the general content of the lecture, the number of times given, and the time of year (shown by the day and month of the week in which is occurred).

Newton Plan Lectures Given 1959-1960

Department	*Lecture*	*Times Given*	*Wk. of Day/Mo.*
Gen. Ed.	Library Facilities	7	7/9
Gen. Ed.	Note-taking	7	14/9
Biology	Protoplasm	3	14/9
English	Symbols of Corr. for English comp.	7	21/9
English	Voyager, literature	7	21/9
History	European History	3	21/9
Biology	Chemical Concepts for Biology I	3	21/9
English	Speech Overview: A Brief Look at the Speech Prog. in Eng.	7	28/9
English	Reading: Theme and Details	7	28/9
Biology	Chemical Concepts for Biology II	3	28/9
Gen. Ed.	Techniques of Study	7	5/10
English	Reading: Summary, Writing for Comprehension	7	5/10
History	Colonial Period	3	5/10
English	Semamtic Traps	7	5/10
Biology	The Cell	3	5/10
Gen. Ed.	Techniques	7	12/10
English	Idiom and L. C.	7	12/10
English	Précis	7	19/10
Gen. Ed.	Study Habits	1	19/10
English	Speech: Body and Voice	1	19/10
English	Speech: Comp. and Outlining	14	26/10
Biology	Introd. to Plants	3	26/10
English	World Study: Dictionary	14	2/11
English	World Study: Dictionary	1	9/11
English	Speech: "Salesmanship & Personality"	1	9/11
English	Letter Writing	7	9/11
Biology	Photosynthesis	3	9/11
English	Paragraphing #1: Topic Sentence	14	16/11
History	Liberty and Order	3	16/11
History	CEEB	7	16/11
Gen. Ed.	Orientation	1	16/11
Biology	Cycles in Nature	3	16/11
English	Grammar I: Test	1	23/11
English	Speech: The Speech Mechanism	14	30/11
English	Theme and Conflict	7	30/11
English	Semantic Traps	7	30/11
English	Speech: Organizing Ideas	1	30/11
English	Paragraphing #2: Methods of Develop. (Unity)	14	7/12
English	Letter Writing	7	7/12
English	Research I	7	7/12
Biology	Evolution of Plants	3	7/12
History	Jacksonian Period	3	7/12
English	Dramatic Reading	14	14/12
English	Letter Writing	7	14/12
English	Building a Library	7	14/12
Biology	Protozoa	3	14/12
English	Speech: Panel Discus.	7	4/1
English	Speech: Speech & Soc.	7	4/1
English	Grammar II	1	4/1
English	Letter Writing	7	4/1
English	Speech: Panel Discus.	1	4/1
English	Paragraph. III: Ref. Systems (Coherence)	14	18/1

Department	Lecture	Times Given	Wk. of Day/Mo.
English	Letter Writing		
History	Geography and the Civil War	4	18/1
English	Research II	7	18/1
English	Reading: Paraphrase and Summary	7	25/1
English	Semantic Traps	7	25/1
Biology	Parasitic Worms	3	25/1
English	Speech: Read. Aloud	14	1/2
English	Research III	1	1/2
English	Speech in Business & Social Situations	1	1/2
English	Poetry	4	1/2
Biology	Lower Chordates	3	1/2
English	Paragraphing IV	14	8/2
English	Vocabulary I	6	8/2
Biology	Water Conservation I	3	15/2
English	Poetry	5	15/2
English	Vocabulary II	6	15/2
English	Poetry	12 (6, 6)	29/2
English	Speech: Read. Aloud	1	29/2
History	The Frontier	3	29/2
Biology	Circulation	3	29/2
English	Poetry	7	7/3
English	Dram. Reading II: Poetry	7	7/3
English	Punctuation	7	7/3
Biology	Blood Pressure	3	7/3
Biology	Evolution	3	7/3
English	Oral Interpretation	7	14/3
English	Speech and Drama	7	14/3
Biology	Respiration	3	14/3
English	Punctuation	7	21/3
English	Punctuation	1	21/3
English	Poetry Reading	7	21/3
Biology	Water Conservation 2	3	21/3
History	America *vs.* World Power	2	28/3
English	Poetry	5	28/3
Biology	Digestion and Nutrition	3	28/3
English	Poetry	2	4/4
History	Trial: Labor Injunc.	1	4/4
English	Poetry	9	4/4
English	Précis: Rules for Writing	7	4/4
English	Poetry Reading	7	4/4
English	Speech: Radio & TV	1	4/4
English	Punctuation II	1	4/4
English	Poetry	3	11/4
Biology	Excretory System	3	11/4
English	Backgrds. of Language	14	25/4
English	Speech class	4	25/4
English	Speech: The Next Step	14	2/5
Biology	Introduction to Nervous System	3	25/4
History	The New Deal	3	2/5
English	Voyager I	7	2/5
English	Speech class	4	2/5
Biology	Special Senses	3	2/5
Biology	Endocrine Glands	3	9/5
History	Supreme Court	3	9/5
History	Music	1	16/5
Biology	Genetics	3	16/5
Biology	Evolution	3	23/5
History	Anti-American Feeling	3	30/5

Students in Jefferson County, Colorado, and elewhere assist in making transparencies for use with an overhead projector in large-group instruction.

A variety of technological aids to instruction help teachers utilize the best available talent in instructing students.

CHAPTER XII

Pope County Community Unit High School, Golconda, Illinois, Program Enrichment Through the Use of Material Aids

J. H. Hobbs

WE HAVE completed our second year of a project that was originally intended to cover four years but was terminated in a sense at the end of the 59-60 school year since funds were not made available for the last two years. In reality, a project such as ours should have no end. It will continue to exert an influence on the school and community for many years. As mentioned in a previous article, the title is a misnomer in as much as the project was limited to Pope County High School which is the only high school in the unit and which has an enrollment of 240 students.

Southern Illinois University cooperated during the first year of the program by furnishing consultant help. Dr. Gordon K. Butts of the material aids department and Mrs. Fletcher of the library department were available and most helpful in getting the program started. They made several trips to our high school during the first year and left with us ideas that proved very beneficial. Dr. Butts accepted a position in India and was not available during the second year.

As a preview to a better understanding of our project, it is necessary to point out that our school district is one of the poorest in Illinois with a total county population slightly more than 4,000. More than thirty-one per cent of our county is a part of the Shawnee National Forest which means that it is not assessed for tax purposes. The assessed valuation of the entire county is slightly over 7 million dollars. Equipment that could be classified in the area of material aids consisted of a film and filmstrip projector. As a consequence, little use of material aids had been made prior to the inauguration of our project.

Planning the Project

Nothing was original about our project. It was an effort on the part of the faculty and school board to take advantage of the resources available. It was discovered early however, that some additional equipment would be necessary to facilitate use of the materials. Our objectives were few and simple. They included: (1) helping the teachers to become familiar with sources of material aids; (2) using these aids to the greatest

J. H. Hobbs is Principal of Pope County Community Unit High School, Golconda, Illinois.

advantage; and (3) determining, through the use of tests, observation, *etc.*, the effect that an increased use of such materials would have on students and teachers after four years. We realized from the beginning that evaluating such a project would be difficult after only four years and, more so, when the time was decreased by half. Since the testing program up to the beginning of the project had been limited to juniors and seniors, this presented a serious problem. We agreed that any evaluation would have to be, in a large measure, subjective and so we proceeded along that course. We were interested in the effect on students and teachers and not in a folder filled with statistics.

Dr. Butts held a two-day workshop prior to the opening of school in September 1958. At that time the high-school teachers were encouraged to present problems and ideas that pertained to our project. They became familiar with the source of many material aids and received instruction on the proper use of films, filmstrips, posters, and other materials. Emphasis was placed on the fact that such aids should involve little or no cost and that teachers would not be required to make use of these materials. Teachers were not requested to devote any specified amount of time in the use of material aids. We were reassured by the consultant that time spent in this field would pay rich dividends and would make our work easier and that of the students, more interesting and more profitable. We were also reminded that only the *proper* use of such materials would prove valuable. Teachers were encouraged to order inexpensive materials that they thought would be useful. Practically all requests were permitted since funds from the Ford Foundation were available for this purpose.

Steps Taken

One of the first projects was the compiling of a list of resource personnel in our county. Each teacher received a copy, complete with telephone number, address, availability, qualifications, *etc.* Several teachers made use of these people who had seldom been asked before. The important point to remember here is that the teachers involved had a complete list with all pertinent information. It is a conservative estimate to state that five times the number of speakers were requested in these two years as in any previous two. The local conservation officer, the nurse from the health department, and the local attorney were among those invited. A local resident now living in Alaska and home on vacation spoke to the Problems class. A scientist from Los Alamos visiting relatives spoke to the Chemistry class. One of the students in that Problems class is in Alaska now and two of the students in the Chemistry class are beginning careers in science in Vanderbilt and the University of Illinois. True, there is nothing original involved here, but how many of us use this valuable source of instruction? A lecture by a former infantry captain, who participated in the Second World War and was a prisoner of war, will make the study of history more interesting for high-school students. The good feature in this is that it costs nothing yet, at the same time, it creates good public relations.

A file was set up for filmstrips and recordings. It is far from complete, but a start has been made. A list of filmstrips, recordings, and other materials available was provided for each teacher. Brochures, pamphlets, and booklets were filed according to subject matter areas and placed in a section of the library for the teachers' use.

Some of the teachers built and used buzz-boards, flannel boards, and peg boards. None of these was in use previous to this time. Teachers discovered that the bulletin board space was inadequate, so several were built in the Ag shop; some were bolted to the walls, others were of the accordian, portable type. The home economics teacher is using cloth swatches for color study, harmony of colors, and pattern shells in pattern study. The English teachers used the tape recorder in reading poetry, reciting from memory, and in a unit on public speaking. The record player was also used to listen to professional readers. Many pictures from magazines and newspapers were displayed in various classrooms.

Since the reading level of entering freshmen, determined by standardized tests, was very low, the freshman-sophomore English teacher has participated in the *Readers Digest* program during the last two years. A remedial reading program was also started and a tachistascope was purchased in April 1960. It was the concensus that most of the students difficulty stemmed from his inability to read. Of course this was not original either, but, once we were all agreed, the effort to combat it became more concentrated. We are trying to make our reading program interesting as well as educational. We hope to continue this program and help those students who are low in reading achievement.

At the beginning, we discovered that our library was seriously deficient. Since we had no one qualified in library work, a member of the faculty agreed to take some training in this field. She has done an excellent job organizing the library books and materials. Much energy and some money have been used in this area. We obtained many books free from a source that was unexpected and purchased others. The librarian, together with the consultant from Southern Illinois University, compiled a list of books that are considered a must in any good high-school library. The Board of Education agreed to purchase these books. New shelves with peg-board backing were built to increase the available display area. Materials for mounting pictures have also been placed in a section of the library for the use of teachers.

Evaluation

The purpose of our project, as with others sponsored by the Ford Foundation, was to seek methods for improving instruction. "What were the results" is the question we like to have answered. Did an emphasis on the use of material aids help the students? How did it affect the teachers?

In the beginning, it was the opinion of all concerned that four years was a minimum for carrying out such a program. Since, through necessity, it has been limited to two years, any accurate evaluation is impos-

sible if not impractical. The original plan was to determine if the freshman class of 1958, after four years in this program, ranked higher or lower on standardized tests that had been used previously. It is too early to draw definite conclusions; however, according to subject matter tests administered in May 1960, there was a noticeable improvement. The average scores on the Illinois statewide tests were somewhat higher also. These results are not recognized as positive proof, but they do serve as an incentive for continued effort in this field.

There are some extras that have evolved from the project. The Ag classes decided to undertake a beautification project of the school grounds. Their efforts are enjoyed by everyone in the community. Flowering peach and crab apple trees, roses, marigolds, and petunias are planted along the front side of our school facing the highway. The rewarding feature here is that the students themselves take pride in such projects. Several suggestions have come from members of the student body and some have been incorporated in our plans. Our Christmas decorations were outstanding in our area. Yes, I believe this was a result of our project. When students understand that what you are doing is for their benefit, they will offer to help. The staff for the school's Annual purchased a TV set for the school. Even the attitude of students towards the care of school property seems to have improved in general. One of the important values of such a project is that it seems to create initiative and interest, both among teachers and students.

Suggestions to Others

There are some suggestions including precautionary measures that might prove helpful to those who would like to initiate such a project. Since the field of material aids is broad, it might be better if one teacher or even a small group of teachers would place emphasis on only one aspect of the program. It is somewhat confusing to attempt to emphasize all types of material aids in one project with an entire faculty. An example would be filmstrips, or wet and dry mounting. After a year of this, the contributions of each teacher or group could become a part of a combined effort of all. In our case it seemed that it is difficult to avoid confusion when all teachers participate in all the many facets of material aids.

Our program was not as well organized as it could have been. Consultant aid from a specialist outside the school system is a must. If possible, it would be to the advantage of all if a room could be reserved for the teachers to use as a workshop during the year. There they could keep materials for mounting still pictures and browse through the almost unlimited examples of visual aids available. All teachers in a system will ordinarily not participate. Although this is desirable, it is not necessary. If teachers can be convinced that the project does not mean extra work, but does mean an improvement in teaching, they will join the "movement."

These two years spent in our project have been both interesting and enlightening. We are thankful to the Ford Foundation and the Staff Utilization Studies for the opportunity to participate. We feel that we have benefited our community, our students, and ourselves. A project such as ours can be carried out with a minimum of expense and is really a lot of fun. Try it next year.

CHAPTER XIII

Saint Paul, Minnesota, Teacher Recruitment Project Accounts for the Third Year of College and School Experiences

KENNETH R. DOANE
WILLIAM J. SCANLAN

BACKGROUND AND DESCRIPTION OF THE PROJECT

THE St. Paul Teacher Recruitment Project sought to tap a new source of secondary-school teachers by providing scholarships to thirty well-qualified high-school graduates who might not have attended college because of financial limitations. (See January 1958 NASSP BULLETIN, pp. 94-114.) The project has three aspects: recruitment, teacher education, teacher utilization. It extends over a five-year period in which the trainees spend time in college, in planned laboratory experiences in secondary schools, and in seminars meeting periodically with the coordinator of the project or other professional personnel in colleges or public schools. The laboratory experiences were limited to two hours per week during the first year; five hours per week during the second year; eight hours per week during the third year; fifteen hours per week each in the fourth and fifth years.

The trainees will earn college degrees at the end of the five-year period. Each trainee will have received during the five-year period not less than $3,000 if he attends the University of Minnesota, or $4,000 if he attends a private college in the St. Paul-Minneapolis metropolitan area.

The achievements of the first year, 1957-1958, were discussed in detail in a previous report in the January 1959 NASSP BULLETIN. Likewise, the achievements of the second year, 1958-1959, were presented in detail in a previous report in the January 1960 NASSP BULLETIN.

ACTION AND RESULTS, ACADEMIC YEAR 1959-1960

Laboratory Experiences

One of the most important aspects of the program is providing each teacher trainee with extensive classroom experiences during the early years in college. If young college students are to be oriented toward

Kenneth R. Doane is Professor of Education, Orange County State College, Fullerton, California; and William J. Scanlan is Coordinator of the Teacher Recruitment Project, St. Paul, Minnestota Public Schools.

careers in teaching, it is most important that they be exposed to the classroom and to the role of secondary-school teachers early in their college careers.

The objectives of the laboratory experiences for the trainees during the third year in college were similar to those proposed for the second year.[1] They are as follows:

To gain insights into successful secondary-school teaching by close association with skilled classroom teachers who acted as project teachers

To gain confidence by having varied classroom experiences under the project teacher's supervision

To understand the components of the teaching-learning processes

To know the factors involved in group management and control in the classroom

To appreciate individual differences in the classroom, and to be able to provide for these differences

To do clerical work, and thus save the time and energy of the project teachers.

During previous summer workshops, the project teachers spelled out the classroom activities that they wanted the teacher trainees to perform in the classrooms. The check list used during the academic year 1959-1960 was a revision of the one used the previous year.

Between September 1959 and June 1960, after 200 hours in the classroom, 27 trainees and 26 project teachers reported the activities participated in most frequently to least frequently, checking the activities 4, 3, 2, 1, or 0 as follows:

Check 4—activities you participated in most frequently.
Check 3—activities you participated in next most frequently.
Likewise 2, 1—for activities you participated in, but less frequently.
Check 0—activities you participated in not at all.

Table I presents these activities and shows those participated in most actively to least actively by the 27 trainees and 26 project teachers.

The typical trainee reported that, during the academic year 1959-1960, he observed his project teacher teach; his project teacher demonstrated teaching techniques; the trainee learned to handle an entire class for a brief period of time ranging from ten or twenty minutes to as much as 30 minutes; the trainee learned to work with his project teacher on marks and reporting practices; he learned to handle an entire class for a full class period on one or more occasions; his project teacher held conferences with him to discuss teaching skills; his project teacher interpreted the role he is to play as a future teacher; his project teacher discussed reasons for using certain teaching techniques; the trainee learned to prepare materials

[1] Kenneth R. Doane and William J. Scanlan, "The St. Paul Minnesota Teacher Recruitment Project Accounts for the Second Year in College and Laboratory Experiences," THE BULLETIN of the NASSP, Vol. 44, No. 252, January 1960, p. 95.

for specific "topics" or "problems" or "projects." Most trainees reported that they had an opportunity to work with slow learners and with fast learners, and to appreciate individual differences in learning abilities. Most trainees reported they had an opportunity to control the climate of the classroom, including discipline. Most trainees reported that they had an opportunity to do clerical work that takes a teacher's time and energy. The trainees as a group reported they had little or no experience in extra-curricular activities; as a group, they had little or no experience arranging instructional displays on the bulletin board; they did not attend faculty meetings at the secondary schools to which they were assigned; they did not operate audio-visual equipment extensively.

Table I presents the activities as reported by the 26 project teachers for the same period—September 1959 to June 1960. One is impressed with the similarity in the rank order of items as reported by the 27 trainees. There is a remarkable agreement on reporting activities as far as rank order is concerned. The items that the project teacher rank of most importance are the items that the trainees rank of most importance. Likewise, items the trainees rank as activities participated in infrequently or not at all are very similar to the items reported in similar vein by the project teachers.

What conclusions may one draw from the activities reported by both trainees and project teachers for the year 1959-1960? The trainees had a variety of worth-while experiences in the secondary schools under the supervision of the project teachers. Table I spells out these experiences in detail. The trainees were involved in many teaching-learning processes where the teacher directs the experiences for the learner. The trainees assisted the project teachers in providing these many teaching-learning experiences, which were varied.

As a group, both the trainees and the project teachers reported that the activities engaged in least frequently included the use of audio-visual equipment.

Logs

Each trainee was asked to keep a log in which he was expected to record his laboratory experiences for the year. Some tentative conclusions may be drawn from an analysis of the logs. The log is a worth-while tool in aiding experienced, trained professional personnel to get a clear picture of the activities engaged in by the trainees. The log verifies and supplements the check list. The individual log gives one a personal and intimate understanding of the feelings of the trainee in many instances. Disappointments, surprises, successes, and failures are often clearly portrayed in the individual trainee's log. Not all logs are as well-written as others. Some are brief to the extent of being inadequate in performing the services they are intended to perform.

Further use of the log as a tool in laboratory experiences of the teacher trainee is recommended.

TABLE I—Check List—Activities for Teacher Trainees
September 1959 to June 1960
Activities Participated in Most Actively to Least Actively
as Reported by Twenty-Seven Trainees and Twenty-Six Project Teachers

Activity	*Rank—Teacher Trainees*	*Rank—Project Teachers*	*Mean Participation Score—Teacher Trainees*	*Mean Participation Score—Project Teachers*	*Median Participation Score—Project Teachers*	*Median Participation Score—Teacher Trainees*
Project teacher gives the trainee varied experiences under the project teacher's supervision	1	2	3.56	3.38	4	4
Project teacher demonstrates teaching to the trainee	2	1	3.40	3.50	4	4
Trainee handles an entire class for a brief period of time, perhaps 10 minutes to 20 minutes at first, to 30 minutes later	3	5.5	3.15	3.04	4	3
Trainee works with the project teacher on marks and reporting practices. He becomes familiar with the Saint Paul Public Schools marking system. Trainee assists the project teacher with clerical work involved in marking and reporting	4	13	2.85	2.22	3	2
Trainee handles an entire class for a full class period on one or more occasions	5.5	9	2.82	2.54	4	3
Trainee confers with project teacher to discuss teaching skills	5.5	5.5	2.82	3.04	4	3
Project teacher teaches trainee the role the trainee plays as a future teacher	7	3	2.81	3.27	3	4
Project teacher discusses reasons for using certain teaching techniques	8	4	2.70	3.12	3	3
Trainee prepares materials for specific "topics" or "problems" or "projects"	9	8	2.67	2.62	3	3
Trainee understands individual differences in learning abilities. Learns to work with the slow learner. Learns to work with the fast learner	11	10	2.56	2.38	3	2
Trainee controls climate of classroom, including discipline	11	15	2.56	2.17	3	2
Trainee does clerical work that takes a teacher's time and energy. Prepares lists. Completes routine record forms. Understands the importance of certain records that are used in the high schools	11	7	2.56	2.92	3	3

Activity	*Rank—Teacher Trainees*	*Rank—Project Teachers*	*Mean Participation Score—Teacher Trainees*	*Mean Participation Score—Project Teachers*	*Median Participation Score—Teacher Trainees*	*Median Participation Score—Project Teachers*
Project teacher assists trainee in meeting staff members and helps him to know them	13	12	2.37	2.27	3	2
Trainee scores project-teacher-prepared tests	14	17	2.19	1.96	2	2
Trainee assists the project teacher with supervised study or coaches individual pupils or small groups during the supervised study period	15	11	2.15	2.35	3	2
Trainee consults school library, college library, or the community library in the preparation of materials to be used for specific units of work under the project teacher's guidance	16	16	2.00	2.15	2	2
Trainee confers with individual pupils under the directions or instructions of the project teacher	17	23.5	1.82	1.54	2	2
Trainee duplicates tests and worksheets	18	18	1.70	1.81	1	2
Trainee uses guidance and personnel material	19	22	1.67	1.58	1	2
Trainee reads and corrects themes	20.5	20	1.56	1.73	2	1
Trainee checks physical features of the classroom — lighting, ventilation, orderly arrangement of furniture, equipment, and supplies	20.5	19	1.56	1.77	2	2
Project teacher suggests professional books or magazines that will be helpful to the trainee	22	14	1.52	2.19	1	2
Trainee prepares tests that are used in the classroom	23	23.5	1.45	1.54	1	2
Trainee conducts drill lessons in subject areas	24	21	1.30	1.62	1	1
Trainee participates in an extracurricular program under the project teacher's supervision. The extracurricular activity may be in one or more of several areas such as athletics, music, speech, clubs, *etc.*	25	25	0.67	1.12	0	0
Trainee observes in classrooms other than in the classroom of the project teacher to whom he is assigned	26	26	0.59	0.92	0	0

Activity	*Rank—Teacher Trainees*	*Rank—Project Teachers*	*Mean Participation Score—Teacher Trainees*	*Mean Participation Score—Project Teachers*	*Median Participation Score—Teacher Trainees*	*Median Participation Score—Project Teachers*
Trainee arranges instructional displays on bulletin boards	27	27	0.48	0.73	0	0
Trainee attends faculty meetings at the secondary school to which he is assigned	28	30	0.45	0.42	0	0
Trainee acts as a laboratory assistant in a science laboratory. May prepare science demonstration materials. May keep science laboratory neat and orderly	29	31	0.41	0.35	0	0
Trainee operates a filmstrip projector and is given an opportunity to use it	30	33	0.30	0.15	0	0
Trainee assists project teacher build equipment or prepare materials project teacher uses on television teaching	31	28	0.22	0.65	0	0
Trainee works on school journalism assignments such as are related to school yearbook or school newspaper	32.5	36	0.19	0.04	0	0
Trainee acts as a laboratory assistant in a laboratory other than one in the natural or physical sciences	32.5	29	0.19	0.58	0	0
Trainee operates 16mm projector and is given an opportunity to use it	34	36	0.11	0.04	0	0
Trainee operates a slide projector and is given an opportunity to use it	35.5	36	0.07	0.04	0	0
Trainee operates a tape recorder and is given an opportunity to use it	35.5	32	0.07	0.27	0	0
Trainee attends PTA meetings at the secondary school to which he is assigned	37	34	0.04	0.12	0	0

Seminars

The seminars for the 1959-1960 academic year sought to orient the trainee to a clearer perception of his role as a trainee. In order to achieve this, the seminars were planned to help the trainees better to understand:

1. Marking and reporting practices as they are carried out in the St. Paul Public Schools
2. The role of the core teacher in the junior high school, and the core teacher's role in counseling and guidance services
3. The role of the counselor in the senior high school, and his relations with classroom teachers

4. The role of the assistant principal in the junior and senior high school, and the help he can be to beginning teachers, especially in the field of discipline

5. The distinguishing characteristics of successful teachers

6. The problems of the trainees as they relate to the college and as they relate to the public secondary school. This was to help, as far as possible, to make the necessary adjustments both in the laboratory assignment and in the college program of the individual trainees, or the trainees as a group, so they will fulfill their roles as trainees to the best advantage of each trainee, and to the best advantage of the St. Paul Public Schools.

The seminars continued to be thought of as supplementary to the laboratory experiences. The seminars are a part of the planned experiences designed in such a way that the trainee eventually will be a richer, more skillful classroom teacher.

Each trainee attended eight seminars during the academic year. Six of the eight seminars were conducted by personnel who held positions in the St. Paul Public Schools. Two seminars were held on the campus of the individual students—for example, Hamline, Macalester, and the University of Minnesota. Here the college adviser to the St. Paul Teacher Recruitment Project and the consultant from the St. Paul Public Schools met with the trainees from that particular college.

Project Teachers' Ratings

Twenty-eight teacher trainees were rated by their project teachers at the end of the academic year 1959-1960. Twenty-three teacher trainees had been with the same project teacher for the full academic year, and had completed approximately 200 hours of laboratory work. Five additional trainees were rated by project teachers who supervised the trainee for less than the full academic year. The form used by the project teacher follows:

You as a project teacher are asked to evaluate the trainee named below. We realize how difficult it is to judge college students as potential teachers. However, certain personal strengths and limitations are apparently evident to most of us concerning the individual. Likewise, certain professional attitudes may be showing up at this early stage. Please return this form in the self-addressed envelope to Mr. Scanlan before you leave for your summer vacation. Your evaluation is confidential and will *not* be shown to the trainee.

KEY: 4—Excellent—Outstanding—Shown to a remarkable degree.
3—Good—Better than average. Some evidence of the qualifications evaluated.
2—Average—Acceptable but in no way outstanding or above average.
1—Below Average—Needs to show marked improvement in the qualifications discussed.
0—Poor—Inadequate to a marked degree.

Please rate each of the qualities 4, 3, 2, 1, or 0.

____Promptness in keeping appointments. Regularity in appointments.

____Personality—Cheerfulness—Tact. Ability to get along with you as a supervising teacher. Ability to *take directions* and *carry them out* to your satisfaction.

____Personality—Cheerfulness—Tact. Ability to get along with students in the classroom. Ability to get students to cooperate with the trainee. Can he *lead the group* in the *direction* he wants them to go?

____Knowledge of subject matter. Do you think the trainee has the potential to acquire the knowledge needed to teach in this field?

____Interest in teaching. Does he seem interested in classroom techniques? Is he enthusiastic about being in the classroom?

____Personal appearance—Is he neat? Is he well-groomed? Does he dress according to good taste for the classroom assignment?

REMARKS:

Please write a sentence or two that you feel best describes the trainee's strengths.

_____

_____

Please write a sentence or two you feel best tells us where this trainee needs to improve most during the next three years.

_____

_____

TABLE II—Comparison of Ratings of Project Teachers

	Median	Q_1	Q_3
Promptness in keeping appointments—Regularity in appointments	4	3	4
Personality—			
Ability to take directions and carry them out to the satisfaction of the project teacher	4	3	4
Ability to get along with the students in the classroom. Ability to get the students to cooperate with the trainee. Can he lead the group in the direction he wants them to go?	3	3	4
Knowledge of subject matter	4	3	4
Interest in teaching	4	3	4
Personal appearance	4	4	4

Table II reports the ratings for the twenty-three trainees in terms of Q_3, Median, and Q_1. The trainees as a group were rated fours and threes much more than any other ratings.

Each project teacher was asked to comment on the trainee's strengths and his limitations. The project teacher was asked to write a sentence or two that point out where the trainee needs to improve during the next two years. The trainees' strengths—important qualities for successful teachers—may be generalized as follows:

Knowledge of subject matter, interest in subject matter, interest and enthusiasm for teaching, getting along well with students, directing learning experiences.

Areas where several trainees need to improve in the next two years may be generalized as follows:

Promptness in keeping appointments; occasionally there were trainees who found it convenient to miss their appointments to an excessive degree. Immaturity in emotional behavior patterns that reflected what one would describe as adolescent behavior rather than adult behavior; a specific example—a trainee who plans his activities in such a way that his laboratory experiences suffered from his being involved in too many activities. Another trainee failed to do more than was assigned—no vision to see what was to be done, and to do it. The lack of drive, and failure to have the leadership qualities needed by teachers were areas where trainees need to work for improvement.

Each trainee is an individual who goes to college, works as a teacher trainee under the guidance of a project teacher, and learns as an individual. He must be evaluated as an individual. He must be held responsible as an individual. Plans for his improvement must be worked out with him to meet his needs and his potential. The following six cases represent three of the best and three of the poorest among the twenty-three accounted for in Table II.

Ratings of the three of the best trainees as rated by their project teachers follow:

Case I

PROJECT TEACHER A, JUNE 1960

Strength: ..... has the interest and the ability to make an outstanding teacher. She should be given a opportunity at graduate work while on the program.

Needs to improve: Develop her potential.

Case II

PROJECT TEACHER B, JUNE 1960

Strength: Outstanding student. Excellent ability to do unit work. Clear understanding of material. Penetrating worker.

Needs to improve: Get closer to the class. Adjust her material to all levels of students.

Case III

PROJECT TEACHER C, JUNE 1960

Strength: Tremendous knowledge and interest. Works well under close supervision. Eager to learn and listen.

Needs to improve: Be able to keep on the subject at hand and not to be led to a favorite topic. Be able to come down to the level of all the students. Relax. Slow down when speaking.

Ratings of the three of the poorest trainees as rated by their project teachers follow:

Case IV

PROJECT TEACHER D, JUNE 1960

Strength: .....

Needs to improve: ..... is going to have to improve a great deal in several areas, especially in regards to attendance, enthusiasm, initiative. I have been disappointed in her attendance, and feel that she isn't too interested.

Case V

PROJECT TEACHER E, JUNE 1960

Strength: He is interested in teaching; he has leadership ability; he enjoys working with students; he is always well-groomed.

Needs to improve: He needs to learn to accept criticism; he needs to show initiative; he should avoid being too friendly with the students; he needs to devote more time to his academic studies. His outside activities actually kept him from being a great deal of assistance to me. This caused him to fail to follow through on projects which he indicated that he desired to do.

Case VI

PROJECT TEACHER F, JUNE 1960

Strength: She has a strong interest in science, and has a good broad background.

Needs to improve: She needs to develop more enthusiasm, establish more rapport with students, and to improve her personal responsibility for the help she has been getting and what she owes in return.

In addition to the twenty-three trainees, each of whom remained under the supervision of one project teacher for the entire year, two additional trainees had laboratory experiences under two separate project teachers each. In each case, it was thought wise to arrange a different project teacher for the second semester.

In the one case, Case *5801*, a young lady majoring in mathematics, the trainee developed the bad habit of not being prompt nor regular in keeping her appointments. In the second semester assignment, the trainee exhibited this same bad habit. For promptness in keeping appointments and regularity in appointments, the trainee received a zero rating the first semester; she received a one the second semester. Both ratings are inadequate, and reflect on the efficiency of the trainee. The value of having assigned the trainee to two project teachers is obvious.

In the second case, *3066*, the trainee had grown tired of being in that particular high school. He had been graduated from the school, and had done a previous assignment there as a project trainee. He had asked to be transferred for the second semester. In this case, his ratings by his

second project teacher were predominantly 2's, and were below his ratings by his first semester project teacher, who had given him 3's on the average. The criticisms of his second semester project teacher was: "Must get excited about teaching. Needs to assume responsibility more. Must get more experience at teaching."

In the third case, *0757*, the trainee was in the schools only one semester, since she was granted permission to spend the second semester in college abroad. Her first semester ratings were entirely satisfactory.

In the fourth case, *2886*, the trainee spent a very limited time in the high-school laboratory because of scholastic difficulties. He was preparing to major in mathematics, and received a failing mark in his major field. On the advice of the project director, he withdrew temporarily from any laboratory assignment until the spring quarter of 1960. He was then assigned to a junior high school, where he completed the required laboratory assignment to the satisfaction of all concerned. The criticism offered by the project teacher is one that has come to our attention and to the trainee's on previous assignments. He needs to improve most in personal dress and grooming.

In the fifth case, *5816*, the trainee was terminated from the program at the end of the second quarter during the academic year, and failed to complete his laboratory assignments to the satisfaction of his project teacher, or to the satisfaction of the project consultant. His indifference was due in part to his change in vocational plans. He expressed an indifference to secondary-school teaching and indifference to taking directions and carrying them out as far as his laboratory assignment was concerned. He remained in college and continued to earn good college marks.

Thus the 23 trainees, each of whom remained under the supervision of one project teacher for the academic year 1959-1960, plus the five additional trainees who worked with one or more project teachers accounts for 28 teacher trainees and their laboratory experiences in the secondary classrooms for the academic year 1959-1960.

Three-Party Conferences—Trainee, Project Teacher, Consultant

The three-party conference was begun during the second semester of 1958-1959.[1] It was continued during the academic year 1959-1960. The conference was structured and followed the same pattern used during the previous year. The conferences were held in what the consultant felt was an informal atmosphere. Strengths were emphasized, and limitations or handicaps were pointed out.

The major objective of the conference was an informal evaluation of the trainee in terms of his potential as a future secondary-school teacher. He was being judged largely in terms of his performance as described by his project teacher. The project teacher's judgment was based on his experiences with the trainee in the classroom during the academic year

[1] Kenneth R. Doane and William J. Scanlan, "The St. Paul Minnesoto Teacher Recruitment Program Accounts for the Second Year of College and Laboratory Experiences," THE BULLETIN of the NASSP, Vol. 44, No. 252, January 1960, pp. 108-109.

1959-1960. These experiences, in most instances, extended over the entire year. In these instances where the trainee remained with the teacher over the entire academic year, the trainee was with his project for 200 hours. The consultant kept in close touch with the project teachers and held these conferences periodically. The consultant is convinced that these conferences are worth while, as they supplement an end-of-the-year written report and give him a better picture of the trainee.

Teacher Utilization

As has been pointed out on numerous occasions, the St. Paul Minnesota Teacher Recruitment Project has three aspects: recruitment of secondary-school teachers; professional education of these recruits; finally, utilization of the services of both the trainee and the project teacher so as to best use each in his most efficient manner. One cannot expect to utilize the services of the teacher trainee until he has learned certain skills. Little or nothing in the way of utilization can take place in the early stages of the program. Gradually, and, in the opinion of the consultant, much more slowly than one would anticipate, the teacher trainee reaches the stage in his professional growth where his services are worth using in the classroom activities. In certain instances, there was genuine progress along the line of teacher utilization. Some examples will illustrate:

Case I—Trainee 4250

A major in English worked all year at correcting written materials, especially papers of one thousand words. The trainee held conferences with the project teacher. In these conferences, she got information and instructions on how papers were to be marked. The trainee also consulted counselor's files so that she would understand academic background, test scores, *etc.* of students whose papers she was marking.

During the first half of the year or longer, the trainee never met the students or held personal conferences. During the spring quarter—the last eleven weeks of school—the trainee met the high-school students and had personal conferences. This arrangement was entirely satisfactory to all concerned. It was clearly demonstrated to the satisfaction of the high-school student, the project teacher (in this case, a high-school English teacher), and the consultant that a reader (in this case, a junior in college with a major in English) can mark papers, writing critical comments that are valuable to the learner (the high-school student). He need not see the high-school student. A satisfactory marking system can be maintained. Conferences between the reader and the classroom teacher are sufficient to produce a satisfactory relationship for all concerned.

Further assignments along this line should be continued both in this study and in other studies. Based on this particular relationship, the assignment of duties was satisfactory. What did the project teacher do when he was relieved of this responsibility? He was one of a number of teachers who was free to devote some of his professional training and skill to a series of half-hour television shows sponsored by the St. Paul Public Schools. He was responsible for a series of four such half-hour programs on the American Short Story.

Case II—Trainee 1261

A major in physics worked all year with a physics teacher. One of his assignments was to prepare the equipment and demonstration materials used by his project teacher in a series of eight television lessons. This is an example of teacher utilization. The experienced, outstanding classroom teacher can teach on television. The trainee, a college junior, can be of assistance in doing routine work commensurate with his knowledge, skill, and experience. He is learning under the guidance of a superior teacher.

Case III—Trainee 0110 and Case IV—Trainee 5806

Both trainees were majors in mathematics. Both worked for secondary-school mathematics teachers who presented materials on television in a series of half-hour shows over the local Educational Television KTCA-TV. Both trainees prepared charts and other visual materials for TV shows. The project teachers were freed from routine classroom details, and thus were able to perform the more creative activities preparatory to teaching new materials on television.

In the opinion of the consultant, the secondary-school television programs in the St. Paul Public Schools were aided materially because of the assistance several of these teachers received. No fewer than eight trainees worked for six project teachers during the academic year 1959-1960 while the project teachers taught 28 half-hour educational television lessons. Each of five project teachers taught a series of four half-hour lessons, and one project teacher taught a series of eight educational television lessons. The trainees assisted in series involving modern physics, modern mathematics, speech, English (the American Short Story), and vocational planning. The St. Paul Public Schools sponsored for the year a series of 64 half-hour television lessons in the area of secondary education. The assistance given by the trainees to a number of teachers who participated was an important part in the success in this relatively new adventure. Creative, dynamic teachers were released from certain details that enabled them to prepare and present television lessons.

There are other examples of the utilization aspect of the problem. In a conference with the chairman of the English department at Harding High School, it was agreed that the following were definite areas where the trainee was helpful to the chairman: the trainee performed innumerable clerical tasks at the direction of the chairman; for example, she set up a filing system, typed cards for the file, kept the file current; typed tests on ditto copy; corrected objective tests; corrected some themes; corrected "mechanical errors" on research papers; administered timed-reading tests; and, from time to time, recorded marks in the grade-record book. The trainee ran errands for the head of the department; she prepared and put up two good bulletin-board displays. The trainee taught a unit on the author, Edwin Arlington Robinson, and his works. The trainee prepared material and keys for a number of grammar work sheets, using two to three supplementary testbooks and workbooks. This assignment was required by the chairman because of the benefits the trainee would derive from it.

What benefits did the project teacher derive? How was she better able to utilize her own professional services? As chairman of the department, she was relieved of much routine. She supervised the trainee. Most important, the project teacher was able to devote more time to the teaching of her college preparatory 11C English class. Here is another example of a teacher finding time to devote to creative teaching. In addition, the project teacher reported she had more time to devote to helping high-school youngsters who needed help in reading.

One would not be factual nor honest in his reporting if he left the topic on teacher utilization and gave the impression that every teacher trainee was an asset as far as utilization of his services in the classroom at this time is concerned. There were instances where the project teacher obtained little or nothing in terms of utilization of the trainee's time and energy.

Often, more often than one would expect, a trainee showed a marked lack of fundamental knowledge and information in his major teaching field. As a junior in college, he wasn't ready to do very much because he lacked the knowledge and skills necessary to succeed. In other instances, the trainee wasn't dependable. He allowed his college life and his other activities to interfere with his efficiency as a trainee in the classroom. In one or two instances, in the opinion of the project teachers, the trainees weren't ready to play the role that was expected of them. The trainees lacked drive, seemed to fail to show the initiative necessary to carry out the activities that the project teacher felt he had a right to expect of the trainee. In most instances, the project teachers and the consultant were hopeful the trainee would improve sufficiently in the two years that remain, during which time the trainees will spend much more time in the classroom.

In the opinion of the writers, the utilization aspect of the project has genuine merit. One needs to be resourceful and creative, but the possibilities are there. One needs the right climate for teacher utilization: a spirit of willingness to try new patterns of teaching; a principal who is sympathetic and encouraging; trained assistants who can assist the creative teacher. It can be done; it is being done. It was done in this study during the academic year 1959-1960.

Trainee Performance and Growth as Measured by Scores and Marks

College Marks

College marks are important to most teachers, and they are equally important to employing officers. The Project Advisory Committee has emphasized the importance of scholarship among the trainees. The grade point average for each trainee has been calculated as follows:

For A, 3 times number of credits in the course
For B, 2 times number of credits in the course
For C, 1 times number of credits in the course
For D, 0 times number of credits in the course
For F, −1 times number of credits in the course

As a group, the trainees continued to demonstrate their ability to succeed in collegiate studies. The mean grade-point average for the academic year 1959-1960 is 1.94. This represents a grade-point average for 27 trainees. The marks of two trainees were not included because of incompletes—in one case, due to personal illness; in the other, due to a trainee spending one semester in a college in a foreign country. These marks will be included in a later report. The three-year cumulative grade-point average for the 27 trainees for whom the marks are to be accounted is an unusually high average, B− for the group. The college marks earned by the group who remained on the program and continue to prepare to become secondary-school teachers demonstrate conclusively that as a group they earn much better than average college marks. As of June 1960, there was one trainee only who remained on the program who had

TABLE III—Grade-Point Averages of Trainees

Item	*Description*	*Number*	*Lowest*	*Highest*	*Mean*	*Median*
1.	1959-60 grade-point averages.....	27	0.77[a]	2.88	1.94	2.05
2.	1958-59 grade-point averages.....	31[b]	0.38	2.68	1.70	1.88
3.	1957-58 grade-point averages.....	29[c]	0.14	2.64	1.37	1.41
4.	1957-60 three-year cumulative grade-point averages for trainees on program one or more academic years and who have remained on program to date.....	27	0.91	2.74	1.91	2.07
5.	1959-60 grade-point averages for trainees on program June 30, 1960, who have been on the program two or more years, for most recent academic year	21[d]	0.77	2.88	1.91	2.05
6.	1958-59 grade-point averages for trainees who are on the program June 30, 1960, who have been on the program two or more years...	23[e]	0.77	2.68	1.83	2.00
7.	1958-60 cumulative grade-point average for trainees who have spent two years in college, but one year only on program.....	6[f]	1.50	2.35	1.95	1.96

[a] Trainee 2886 has had a grade-point average of less than 1.00 for the last two academic years. He has changed his major recently. He is the only trainee on the program at the present time with a grade-point average of less than 1.00.

[b] One trainee who was awarded a grant beginning in September 1958 was terminated in February 1959. He was replaced with a trainee whose award began in February 1959. Both trainees' grade-point averages are included in the above table.

[c] One trainee left college and the program after two months of the first year in the program. This trainee had no grade-point average.

[d] Eleven trainees have been on the program three years, ten trainees have been on the program two years. (Two additional trainees not accounted for because final marks were incomplete at this time.)

[e] Twelve trainees have been on the program three years, eleven have been on two years to date.

[f] These six trainees are college sophomores.

a cumulative three-year college average of less than 1.00. As of June 1960, trainee 2886 had a three-year cumulative average of 0.91. Four of the 27 trainees accounted for had completed two years in college and one year on the teacher recruitment program. The two-year cumulative average for these four trainees was 1.80.

One may conclude that, as a group, the teacher trainees on the program, at this stage in their educational development, are better-than-average college students and, based on marks earned in college to date, are good risks in terms of potential teachers of academic subjects in the secondary schools. One has every reason to believe that, as a group, they will be well-prepared to teach the academic subjects in their major teaching fields.

General Culture Test Results

The trainees have taken the *Cooperative General Culture Tests* as a part of the battery of criteria used in selecting trainees and as an evaluative measure within the five-year experiment. The percentile ranks are

TABLE IV—Cooperative General Culture Test Results

Item	Description	Number	Total	Social Studies	Literature	Science	Mathematics	Fine Arts
1.	Median percentile rank, 1960[a]	28	97	96	89.5	91	96	86.5
2.	Median percentile rank, 1959[a]	28	94.5	88	79	89	94.5	79
3.	Median percentile rank, 1958[a]	22	94.5	88	80.5	85	93	72.5
4.	Median percentile rank, 1957[a]	12[b]	65	55	62.5	50	72.5	62.5
5.	Difference between mean raw scores of 1960 and 1959	27[c]	9.0	2.5	1.8	1.7	1.4	2.7
6.	Lowest percentile rank, 1960[a]	28	79	55	25	50	55	30
7.	Highest percentile rank, 1960[a]	28	99	99	99	99	99	99
8.	Median percentile rank of original 30 trainees July 1, 1957[d]	30	55	50	55	50	60	50
9.	Median percentile rank of trainees who were terminated by July 1, 1959	6	90.5	94	79	60	89.5	70
10.	Median percentile rank of trainees who became trainees in the third year (1959)	6	93	96	85	87	94	77.5

[a] *Cooperative General Culture Test*, College Sophomore norms used.
[b] Trainees for whom 1957 data were available.
[c] Data available on 27 trainees in 1960 and 28 cases in 1959.
[d] Taken from Kenneth R. Doane and William J. Scanlan, "Teachers Are Recruited and the First Year of College and Laboratory Experiences Are Accounted for in St. Paul," THE BULLETIN of the NASSP, January 1959, pp. 143, 144.

based on college sophomore norms. The median percentile rank (college sophomore norms) for the group of 28 trainees is in the upper quartile for all areas, as well as for the total score of the battery. The median score for three of the five tests was above the nintieth percentile. In all areas there were gains in the median percentile score over the previous year. The results confirm the academic performances and the estimates of mastery of subject matter made by the project teachers.

Minnesota Teacher Attitude Inventory

The *Inventory* had been administered to all applicants for trainee awards in May 1957, and to trainees on the program in May 1958, 1959, and 1960. The eleven trainees on the program for three academic years present an interesting picture:

TABLE V—Trainees on Program Three Years

Individual Code	*Raw Scores*			
	1957	*1958*	*1959*	*1960*
0110	06	60	67	46
0658	−05	−11	−12	09
0757	11	13	−08	14
1261	−05	32	33	52
1473	31	01	38	15
2218	36	51	59	87
2575	42	27	13	53
2886	−32	15	38	42
3066	−28	02	05	02
5321	−12	26	37	74
4250	−23	36	03	24

One would find it very difficult to make positive, firm generalizations concerning the eleven trainees who have taken the *Inventory* for four consecutive years, from seniors in high school through juniors in college. About certain individual cases, one certainly can make rather firm statements. Case *0658* has shown little increase in scores on the *Inventory* over the four-year period; for three of the four years, the raw scores have been minus scores. Case *3066* is a case of somewhat similar nature. The first score was a minus 28, and the annual scores have never gone above a plus five. There are a number of cases among the eleven where the scores have progressed consistently from year to year; Case *2218* and Case *5321* are two such examples.

The ten trainees on the program for two academic years present a picture that is somewhat similar:

TABLE VI—Trainees on the Program Two Years

Individual Code	*Raw Scores*		
	1958	*1959*	*1960*
5801	32	08	−20
5802	39	23	36
5806	16	26	36
5808	20	04	37
5810	45	56	73
5811	−33	−24	−16
5803	56	55	23
5809	—	57	25
5812	−15	009	22
5807	32	51	81

It would be difficult to make generalizations concerning this group of ten trainees. However, there are particular individuals about whom one could raise certain questions. Case *5811* is an example of a trainee who has consistently scored low on the *Inventory*. Cases *5810* and *5807* are cases that have scored high, and each time the raw scores have been higher than the previous score by a considerable absolute increase.

In conclusion, one would generalize to this extent: to date, certain trainees tend to increase their raw scores from year to year; others, who are exposed to somewhat similar experiences, do not show any evidence of increasing their individual raw scores; in fact, occasionally the raw scores actually decline. One awaits the picture two years hence, when the trainees have completed their educational program.

TABLE VII—Minnesota Teacher Attitude Inventory

Item	*Description*	*Number*	*Mean*	*Median*	*Range*
1.	Scores, May 1960, of 27 trainees	27	37.4	39	(−20 to +87)
2.	Scores, May 1960, of trainees who completed third year on program	11	38.0	42	(+ 2 to +87)
3.	Scores, May 1960, of trainees who completed second year on program	10	29.7	(+25 to +36)	(−20 to +81)

Minnesota Multiphasic Personality Inventory

The *Minnesota Multiphasic Personality Inventory* was administered to the trainees again in the spring of 1960. The K-scale continued to show nominal elevations in a number of profiles. This has been characteristic of the group since the beginning. There have been no significant changes in the scores from year to year. As a group, the trainees responded very

much like any group of young people who were at mid-point through college. Two trainees show patterns that, in the opinion of the writers, indicate dissatisfaction, either with the program or with themselves.

Consultant's Evaluations

The consultant gave the Advisory Committee a report that included an evaluation of each teacher trainee at the close of the 1959-1960 academic year. The following criteria were used:

College marks to date
Scores on General Culture Tests to date
Informal conferences, and evaluations made as a result of these conferences, between the project teacher and the consultant
Written evaluation of the trainee made by the project teacher with whom the trainee worked.

Table VIII gives the evaluation of each of the 29 trainees. The evaluation of 4 is considered outstanding; 3 is considered good or above average; 2, average; 1, below average; and 0, very poor. A score of 4 or 3 indicates that the trainee has already exhibited strong potential as a teacher. A score of 2 indicates there were certain limitations that must be overcome. In cases where a score of 1 was given, the trainee was considered very poor. Four trainees were given a rank of 4; eight, a rank of 3; fifteen, a rank of 2; and two, a rank of 1.

TABLE VIII—Consultant's Evaluations Reported to Advisory Committee June 1960

Code	*Rank*	*Major*	*Reasons for Rating*
5801	2+	Mathematics	Fair risk as a potential mathematics teacher. Has grown careless in some respects as far as laboratory responsibilities are concerned. Plans marriage in summer 1960.
0110	3	Mathematics	Good risk as a potential mathematics teacher. Good college marks.
0658	2+	Science	Satisfactory academic achievement. Needs to develop more self-confidence in the classroom. Lacks leadership in the classroom to date.
0757	2	Music—Vocal	Good academic preparation for potential music teacher. Lacks strong desire to be a teacher.
5802	4	Social Studies	Very good academic preparation for potential social studies teacher. Has shown remarkable improvement in maturity in role as a teacher.
5902	3	Music—Instrumental	Good academic risk. Normal progress for a trainee who has completed one year only on the program.
5901	4	English	Very good academic achievement. Has high potential to develop into an outstanding English teacher. Has completed one year only on the program.
6002	2	English	Excellent college marks. Joined program during present academic year. It is too early to make anything except tentative judgments.

Code	*Rank*	*Major*	*Reasons for Rating*
5806	3	Mathematics	Good risk as a potential mathematics teacher. Has a pleasing personality, and adjusts well to all classroom situations. Continues to neglect an academic course occasionally if he is not interested.
5904	2+	Social Studies	Interested in teaching. Enjoys working with young people in the classroom. Has a tendency to be involved in too many activities. His laboratory work in the high school suffers. He must learn to curtail his social activities.
1261	2	Science	Good college student. Needs to learn to be a more positive personality in the classroom. Lacks initiative in the classroom. Resigned from the program June 1960, at the completion of his junior year in college and his third year on the program. Felt that he did not have the personality to be successful as a high-school teacher. Will continue in college, and plan for other vocational interests.
1473	2+	Music–Vocal	Good academic preparation as a potential music teacher. Has shown some progress in becoming a more dynamic person in the classroom. Needs to develop greater leadership qualities in the classroom. Vacillates in her own mind about being a music teacher. This is reflected in her attitudes about teaching and in her actions.
5808	3	Mathematics	Excellent potential as a successful mathematics teacher. Has had reasonable success in all areas.
5810	3	Speech–English	Good potential as a speech and English teacher. Enthusiastic and eager to learn. Good college marks.
5811	2	Science	Good academic background. Needs to develop more enthusiasm for teaching and for the activities in the high-school classroom. Has a tendency to avoid genuine enthusiastic participation in laboratory experiences.
2218	3	English	Good risk as an English teacher. Enthusiasm and leadership demonstrated in the classroom. Well-liked by students. Teacher trainee has a health problem.
5803	2+	Music–Vocal	Good academic preparation for a potential music teacher. Must develop a more positive approach in the classroom.
3908	3	Music–Instrumental	Has an excellent attitude toward teaching. Needs to acquire a more thorough knowledge of various band and orchestra instruments. Has completed one year on the teacher recruitment program. A good risk as a potential teacher.
5809	2+	Business Education	Knows subject matter. Has tendency to do what is required but no more. Needs to sense the wide scope of a teacher's duties.

Code	*Rank*	*Major*	*Reasons for Rating*
5900	3	Mathematics	Liked by students in the classroom. Making normal progress for a trainee who has been on the program one year. Has good potential as a future mathematics teacher.
2575	1	Music—Vocal	Fails to show initiative and leadership in the classroom. Shows little enthusiasm for teaching over a long period of time. Hasn't convinced any project teacher to date that she will be successful in the classroom. One sees enthusiasm and progress at times, but, at other times, this is lacking. There has been some improvement, but trainee has a long way to go.
5812	2	Social Studies	Has the potential to be a successful social studies teacher. Doesn't always put forth the effort required to convince project teacher the trainee is doing his best. This isn't always obvious, and is hard to define in specific terms, but is sensed by project teachers. On the other hand, he demonstrates many fine qualities.
5886	2	Science	Immature social behavior evident to professional people who deal with trainee in the classroom. He has considerable ability, and has demonstrated that, to date, he may complete his required work to qualify him as a high-school science or mathematics teacher. Needs to learn to be a more sophisticated adult. Needs to show mature behavior in personal grooming and dress. His academic achievement has been below average.
2948	2	Social Studies	Has potential to be a successful teacher. if he works at it. Is liked by students in the high-school classroom. Lacks drive at times. (Re-signed from project in July 1960.)
3066	2	English	Has improved his position as far as knowledge of academic background in major field is concerned. Needs to learn to assume more leadership in the classroom.
5321	2+	Social Studies	Can develop into a strong classroom teacher. Allows social life and campus activities to interfere with his assignment in the field work in the high school.
5816	1	Science	Excellent college marks. Complete lack of interest in classroom work as far as high-school laboratory assignment is concerned. Lost interest in being a teacher. Terminated from the program because of his disinterest in the program, and his disinterest in planning to be a secondary-school teacher.
5807	4	English	Excellent potential as a future English teacher. Has much enthusiasm in the classroom.
4250	4	English	Excellent potential as an English teacher. Very good college marks. Clear understanding of what duties she was expected to perform, then did her assignments well.

Trainees Whose Grants Were Terminated

The St. Paul Teacher Recruitment Project has sought to tap a new source of secondary-school teachers by providing scholarships to well-qualified high-school graduates who might not otherwise attend college to completion because of financial limitation. To July 31, 1960, there were 52 teacher trainees (27 men and 25 women) who received grants of money for one or more semesters in college. *Twenty-four* of these trainees (12 men and 12 women) were terminated after having received a grant for one or more college semesters. Table IX describes the trainees who have had their grants terminated.

In six cases (numbers 1, 5, 8, 15, 16, and 18 in Table IX), young women were terminated because they married or were about to be married. The policy of the Advisory Committee has been one in which scholarships have been given with the expectation that the trainees would be secondary-school teachers at the end of the five-year program. To June 1960, the policy has been one of discouraging marriages of trainees, and trainees who married were terminated. Since June 1960, the Advisory Committee has been more liberal concerning granting permission to trainees to marry and remain in the program. Permission will be granted under certain circumstances, especially if the trainee is willing to remain in the program and plans to teach in the secondary schools. To date, permission has been granted to two trainees to marry—one young man and one young woman. Each had completed the third year in college.

In three cases (numbers 9, 13, and 21 in Table IX), the trainees have changed their vocational plans from public secondary-school teaching to plans involving the ministry in two cases and plans involving a vocational interest in the Catholic Sisterhood in the other case.

Academic failure accounts for four men (numbers 2, 10, 11, and 23). All four cases occurred during the trainees' first year in college. In two cases (numbers 6 and 20), financial difficulties played an important part. In addition to financial difficulties, poor college marks and changes in vocational plans are important in these two cases. In two other cases (12 and 24), both young women, interest in the program and in college was short-lived; both left college during the first year.

Another type of individual begins to appear on any report accounting for trainees who are terminated before the program is concluded. Number 7 is an example. The young man remained in college, continued to be a good college student, but has ceased to be interested in secondary-school teaching as a career. It may be stated parenthetically that he never demonstrated real evidence of being a success, and no doubt realizing that he would not be successful, left this area of vocational planning. He is a type of youth with whom personnel of programs similar to this one are familiar.

Case 3 was dropped as a poor risk after two years in the program. His project teachers and the consultant felt he was too poor a risk to carry any farther.

Trainees recently terminated from the program include numbers 17 and 22. Both are young men who are no longer interested in secondary-school teaching as a vocational choice. Number 22 continues to be successful in college, but became indifferent and disinterested to the responsibilities in the laboratory experiences. Number 17 is somewhat similar—a young man, who had been in the program and seemed successful and interested, but after a few months in his junior year in college, decided he had no further interest in secondary-school teaching as a career. During the semester, his college marks dropped noticeably.

To account for the remaining cases rapidly, number 4 is another young man who changed his vocational plans. How seriously he follows his next adventure will be worth reporting at a later date. The final case to be reported, number 14, is a young lady who decided she needed financial assistance no longer, and preferred to finish her education independent of further financial assistance and in less time.

Thus the 24 trainees whose grants have been terminated have been accounted for. Table IX proves interesting reporting. Early marriages for young women, poor college marks, failure in college, and changed vocational plans, including an increased disinterest in secondary-school teaching, account for reasons for termination for the 24 young people who have received financial assistance for one or more semesters.

Accounting for Teacher Trainees

As of September 1, 1960, there were 28 teacher trainees (15 men and 13 women) on the program and ready to begin the new academic year 1960-1961. Seven of the trainees have indicated that they plan to major in English; six in music; five in mathematics; five in social science; four in science; and one in business education.

The academic success of the group is good as measured by college marks and grade-point averages. The mean grade-point average (Table X) for the 28 trainees is 1.89; the median, 1.96. This represents a B− average for the group as a whole. Twelve of the 28 trainees have a 2.00 (B) average or better. One trainee had a grade-point average of less than 1.00 (C) for his three years of college work.

The 28 trainees who began the academic year 1960-1961 as a group have excellent percentile ranks in terms of the total *Cooperative General Culture Test*, sophomore norms. The mean is at the 95 percentile and the median is at the 97 percentile. Only two of the 28 trainees scored below the 90 percentile.

Ten of the 28 trainees ready to begin the new year of the program have completed three years as trainees and are beginning their fourth year. Ten additional trainees have completed two years as trainees and are beginning their third year. Five teacher trainees have completed one year on the program and are ready to begin their second year. Three additional trainees are beginning their experiences as teacher trainees—one has completed one quarter as a trainee, and two are just beginning their first year.

TABLE IX—Trainees Whose Grants Were Terminated

No.	Code	Sex	Major	Academic Grade Point Average				Composite GCT % Rank				MTAI Raw Scores				Semesters in:	
				1958	1959	1960	All	1957	1958	1959	1960	1957	1958	1959	1960	Program	College (to date)
1.	0330	F	English	1.69			1.69	45	60			41	82			2	2
2.	4726	M	Science	0.19			0.19	70				21				2	2
3.	0586	M	Business Education	1.09	1.13		1.11	35	55	60		−51	−14	−08		4	4
4.	5804	M	English	1.41	0.86		1.16		75	93			33	39		2	4
5.	4811	F	English	1.91	1.30		1.68	90	97	95		14	18	07		4	4
6.	1158	F	Mathematics	0.44			0.44	35				29				1	1
7.	1261	M	Science	2.33	2.00	2.29	2.21	82	94	96	97	−05	32	33	52	6	6
8.	1336	F	English	1.00			1.00	65	50			32	47			2	2
9.	1595	F	English	1.13			1.13	70	79			71	63			2	4
10.	1621	M	Physical Education	0.14			0.14	25	45			−39	−10			2	2
11.	1763	M	Science	0.43			0.43	70	88			−20	−12			2	2
12.	1899	F	Social Science	....*	....	....	....	30				12				1	1
13.	5024	M	Music	1.72			1.72	40	50			−33	−53			2	4
14.	49112	F	English	1.83	1.14		1.47	40	55	88		35	35	44		4	6
15.	5111	F	Speech—English	1.80	1.90		1.85	85	98	95		21	06	−02		4	4
16.	2614	F	Social Science	1.41			1.41	65	60			−28	−21			4	4
17.	2948	M	Social Science	0.84	1.08	1.27	1.06	40	55	60		−25	−43	−20		6	6
18.	5805	F	Social Science	2.14	1.89		2.00		88	94			44	06		2	4
19.	5814	M	English	1.89	0.38		1.34		85				00			1	4
20.	5214	F	Business Education	0.62			0.62	45	70			16	28			2	2
21.	3424	M	Social Science	1.39	1.25		1.33	30	55	60		31	32	33		4	4
22.	5816	M	Science	2.90	2.50	2.20	2.50		99	99	99		33	33		3	6
23.	4043	M	Mathematics	0.15			0.15	65	75			30				2	2
24.	4359	F	Home Economics	0.93			0.93	12				−01				1	1
			TOTAL:	29.38	15.43	5.76	27.56	1039	1433	840	196	+151	+300	+165	+52		
			NUMBER	23	11	3	23	20	20	10	2	20	19	10	1		
			MEDIAN:	1.39	1.25	2.20	1.16	45	75	93.5	98	(+14 to +16)		+28	(+7 to +33)	52	

*No college marks earned.

No.	Reason for Termination
1.	Marriage.
2.	Failure to succeed in college. Lack of interest in college and in the program.
3.	Poor risk as a teacher.
4.	Lack of interest in the program. Changed vocational plans.
5.	Marriage.
6.	Financial difficulties. Poor college marks. Lack of interest in program.
7.	**Lack of interest in being a secondary-school teacher.
8.	Marriage.
9.	**Entered a teaching order of Catholic Sisters.
10.	Dropped from college. Poor academic record.
11.	Dropped from college. Poor academic record.
12.	Lack of interest in college or the program. Left college during first semester.
13.	**Plans to study for the ministry.
14.	**Financial assistance no longer necessary. Preferred not to spend fifth year in college.
15.	**Marriage; may change to elementary-school teaching.
16.	Marriage; lack of interest.
17.	**Changed vocational plans. No longer interested in secondary-school teaching.
18.	**Marriage.
19.	Dissatisfaction with his adjustment to a particular college. Poor marks.
20.	Financial difficulties. Poor college marks. Changed vocational plans.
21.	**Plans to study for ministry.
22.	**Changed vocational plans. No longer interested in secondary-school teaching.
23.	Dropped from program because of lack of interest in college and program.
24.	Lack of interest in the program. Poor college marks. Other vocational plans.

**Expected to continue in college.

TABLE X—Trainees Expected To Enter Fourth Year (1960-1961)
September 1, 1960

13. **Plans to study for the ministry.

**Expected to continue in college.

TABLE X—Trainees Expected To Enter Fourth Year (1960-1961)
September 1, 1960

Code	*Sex*	*Major*	*Academic Grade-Point Average*	*Composite GCT % Rank 1960*	*MTAI Raw Score 1960*	*Number of Years: in College*	*Number of Years: as Trainee*	*College*
5801	F	Mathematics	1.64	96	−20	4	3	Hamline
0110	F	Mathematics	1.93	99	46	4	4	Hamline
0658	F	Science	1.52	99	09	4	4	Macalester
0757	F	Music	....*	96	14	4	4	Bethel
5802	M	Social Science	2.09	96	36	4	3	U. of M.
5902	M	Music	2.35	99	50	3	2	Macalester
5901	F	English	2.17	95	54	4	2	Hamline
6002	M	English	2.19	99	56	3	1	U. of M.
5806	M	Mathematics	1.31	99	36	4	3	Hamline
5904	M	Social Science	1.50	90	55	4	2	U. of M.
1473	F	Music	2.34	95	15	4	4	Hamline
5808	M	Mathematics	2.29	98	37	4	4	St. Thomas
6002	M	Science	1.61	97	19	4	1	U. of M.
5810	M	Speech—English	2.08	99	73	4	3	U. of M.
5811	F	Science	1.99	99	−16	4	3	Hamline
2218	F	English	....*	99	87	4	4	Macalester
5803	F	Music	2.42	99	23	4	3	Hamline
5908	M	Music	1.75	91	39	3	2	Hamline
5900	M	Mathematics	1.72	91	39	3	2	U. of M.
5809	F	Business Education	2.74	96	25	4	3	Hamline
2575	F	Music	1.42	79	53	4	4	Macalester
5812	M	Social Science	1.62	98	22	4	3	U. of M.
3066	M	English	1.28	85	2	4	4	Hamline
6004	M	Social Science	2.55	97	44	4	1	U. of M.
2886	M	Science	0.91	97	42	4	4	U. of M.
5321	M	Social Science	1.28	95	74	4	4	U. of NM.
5807	F	English	2.07	94	81	4	3	Macalester
4250	F	English	2.37	97	24	4	4	U. of M.
		TOTAL	49.14	2674	1019	108	84	
		NUMBER	26	28	28	28	28	
		MEAN:	1.89	95.5	36.4	3.88	2.86	
		MEDIAN:	1.96	97.0	38.0	4.00	3.00	

*Incomplete

The twenty-eight trainees have indicated they will attend five colleges as follows: University of Minnesota, 11; Hamline University, 10; Macalester College, 5; St. Thomas College, 1; and Bethel College, 1.

Project Teachers' Participation

Sixty-two classroom teachers have served as project teachers on one or more occasions since the project began three years ago. Forty-six trainees have worked under the guidance of the 62 classroom teachers. Twenty-seven project teachers have worked with a single trainee; 15 project teachers have worked with two trainees; ten, with three trainees; four, with four trainees; two, with five trainees; one, with six trainees; one, with seven trainees; and one, with eight trainees.

During the most recent academic year (1959-1960), 28 project teachers worked with the trainees as follows: 24 project teachers each worked with a single trainee; three, with two trainees each; and one, with three trainees.

Many of these project teachers have worked closely with the project consultant and have remained close to the program since its inception. Workshops lasting one or two days have been offered during the summers of 1957, 1958, and 1959. The workshops have assisted the teachers in teacher education principles.

Conclusions

The St. Paul Teacher Recruitment Project has completed the third year of a five-year project. The offering of scholarships to able high-school graduates who are considering secondary-school teaching is not a clear-cut definitive answer to the teacher shortage. For some high-school graduates who are potentially good risks academically, scholarships help supply teachers in a period of teacher shortage; for others, who seem to be equally good risks, scholarships are not the answer. As of July 31, 1960, at the close of the academic year, ten teacher trainees had completed their third year on the program, and their third year of college. It must be kept in mind that twenty of the original thirty no longer remain on the program or are they preparing themselves for secondary-school teaching positions in the St. Paul Public Schools. Ten additional teacher trainees had completed their second year on the program and their third year in college. These ten trainees had been chosen at the close of their freshman year of college. Six additional teacher trainees had completed their first year on the program; four of the six were college sophomores; two were college juniors. Thus, 26 active teacher trainees have completed one or more years on the program; 22 of the 26 have completed their third year in college. Two additional candidates were accepted as teacher trainees for the fall of 1960. Both are in their fourth year of college—one a transfer student with previous chemical engineering training, and the other a liberal arts student who will transfer to education after earning a liberal arts degree within a quarter of additional work at the University of Minnesota.

Twenty-four trainees have left the program after having received a grant for one or more semesters in college. Why did these people leave? Table IX explains in part the answers. Here again, the picture today is much the same as it was a year ago—early marriages of young women, changed vocational plans, lack of interest in secondary-school teaching, academic failure, poor college marks—all played a part in accounting for trainees who were terminated.

By the close of the academic year (1959-1960), *50* teacher trainees, 25 women and 25 men, had received grants of money for one or more college semesters. *Twenty-six* of the *50* teacher trainees are in college and are preparing themselves to be secondary-school teachers in the St. Paul Public Schools. Two additional women have left the program, but are in college and are preparing to be secondary-school teachers independent of the program.

One must emphasize the optimistic side of the picture if he is to get a true picture of the entire program. It must be kept in mind that for a large number of young people, both men and women, the St. Paul Teacher Recruitment Project offered considerable financial assistance in making it possible to earn college degrees and prepare to be secondary-school teachers. Among the 30 trainees who began the program in the fall of 1957, ten are still in the program and are beginning their fourth year on the program; ten additional trainees, who began the program at the beginning of their second year in college, are beginning their fourth year of college and their third year in the program.

The academic year 1960-1961 will begin with 28 trainees in the program. Twenty-four of the 28 will be in their fourth year in college. These 24 trainees will spend 540 clock hours in the school laboratory assignments the supervising teachers give them. In addition to being trained, many will perform services that will be of great assistance to the project teacher. The utilization aspect of the project should be in full swing. The project teacher will spend time helping in the professional education of the trainee, but it is anticipated the classroom teacher will be relieved of many routine responsibilities and thus will be able to devote more of his time to creative teaching.

With the aid of a tape recorder, the teacher of ninth-grade typing is able to instruct eighty pupils in two rooms. A narrow table placed in the doorway provides a means for being seen by all pupils when necessary. The tape recorder is attached to the loud speaker of the public address system which is in the center of the ceiling of both rooms. Much of the routine instruction is given by tape which releases teacher and aide for work with individual pupils in the San Diego, California, city schools.

CHAPTER XIV

San Diego, California, Conducts Two-Year Experiment with Team Teaching

LEE L. BLOOMENSHINE
T. MALCOMB BROWN

A TWO-YEAR experiment in the utilization of staff in the secondary schools of San Diego was begun in September 1958 by authorization of Dr. Ralph Dailard, Superintendent of Schools, and the Board of Education. San Diego hoped to accomplish four things by participating in the experiment. These are identified in the objectives determined by the local administrators:

First, to extend the use of available skilled teachers over a large group of students

Second, to provide for effective instruction through the use of non-credentialed services in lieu of services of regularly certificated teachers

Third, to assist in the recruiting of competent people to be teachers of the future

Fourth, to improve the quality of instruction by the team approach.

The experiment was set up under the administrative guidance of the assistant superintendent in charge of secondary schools. Volunteers were called for among both principals and teachers. Since it was planned to use college students as aides, the four schools selected were those located near the San Diego State College. This was a necessary arrangement so students might work four hours a day helping in the experiment and still be within reasonable distance in order to pursue their college work the rest of the day.

The local schools decided on the subject areas to be included in the experiment. No department or teacher was required to participate. Participants entered wholeheartedly into the experiment.

The second year started with a three day, pre-school workshop, September 2, 3, and 4. It began auspiciously with Robert Moore, Associate Director of the Commission, as the leader. The fact that about half of the teachers had taken part in the experiment during the first year was of much help to the neophytes.

Lee L. Bloomenshine is Assistant Superintendent in Charge of Secondary Schools, and T. Malcolm Brown is Project Coordinator, San Diego City Schools, San Diego, California.

Again it was fortunate that it was possible to obtain college students as aides. One of the objectives of the experiment was to assist in recruiting young persons who demonstrated potential as teachers. Several aides who had not planned to enter education as a career have decided to do so as a result of their work in this program.

Beginning with September 1959, the experiment was expanded to include five secondary schools—the Mabel O'Farrell Junior High School joined the original group of four. The number of teams was increased from nine to thirteen, and the number of teachers from sixteen to twenty-two, with an enrollment increase from 1,693 to 2,200 students.

There were several changes made in subject area teams, in personnel of teams, and in the location of teams, considered necessary by the addition of a new school plant and the inevitable transfer of teachers.

In addition to the genuine interest and enthusiasm of the teachers and principals cooperating in the project, there were other factors that contributed to its success. Among these were the novelty of the experiment, the opportunity to break away from tradition with impunity, the acquiring of status among ones colleagues, and the realization that the country in general seemed to be observing them.

The evaluation of the experiment was conducted by Dr. George A. Koester, Professor of Education, San Diego State College. The evaluation summary is on file in the NASSP office.

WILL C. CRAWFORD SENIOR HIGH SCHOOL

Enrollment: 1,825

Principal: Mrs. Mary I. McMullen

Boys Physical Education Team—184 students
- 1 team leader
- 1 teacher
- 2 aides

U.S. History Eleventh Grade—171 students
- 1 team leader
- 1 teacher
- 2 aides

English Tenth Grade—137 students
- 1 team leader
- 1 teacher
- 2 aides

Crawford High School continued to use teaching teams in United States history at the eleventh-grade level and boys physical education at the tenth- and twelfth-grade levels throughout the two years of the experiment. During the second year, two classes in English at the tenth-grade level were added following the same pattern as the other subject areas; *i.e.*, a highly skillful experienced team leader, a very promising teacher with two years only of teaching experience, and two non-certificated teacher-aides assigned for four hours each. Students were programmed

without special selective criteria. The equivalent of three classes was assigned to the two teachers for each of the two hours of the project.

The teachers with one year of experience in the project, as well as those with two years of experience, seem to be unanimous in their opinion that the opportunities for improving classroom instruction are greater in the project classes than in conventional classes. Much wider use of audio-visual teaching materials enriched and broadened the instruction. Student participation through reports, panels, and similar presentations increased the experience of the participants in research, independent planning, and meaningful activities, and motivated the total class membership to wider participation. *Opportunities to work with individuals and various size groups, as common needs revealed themselves, was strikingly successful.*

The professional stimulation and growth of the teachers themselves through the need for working together in organizing and planning was a strong feature of the experiment.

The two most striking problems revealed are (1) the inadequacies of our present school plants to allow for truly effective, intensified individualized learning-teaching, and (2) the need for complete renovation of administrative-organizational procedures in the secondary school to provide flexibility. This flexibility must permit individualized working schedules for different students, and for different subject matter areas. Equally important is recognition of individual differences in teachers and providing ways to utilize talents and abilities. The team approach cannot be imposed universally, but should be used as the talents and temperaments of teachers dictate.

The need for adequate preparation for a total school staff to profit from opportunities presented by a new approach to instruction, organization, and administration in the secondary school cannot be over-emphasized.

ABRAHAM LINCOLN SENIOR HIGH SCHOOL

Enrollment: 1,537

Principal: Dr. Earl P. Andreen

Biology Tenth Grade—145 students

1 team leader
1 teacher
2 aides

U.S. History Eleventh Grade—163 students

1 team leader
1 teacher
2 aides

Background and Areas of Project

Description of the Team. Teachers in the fields of social studies and science were brought together in the spring semester of 1958 to consider the proposal to participate in the Staff Utilization Project. Throughout the discussions there was evidence of a desire to explore the possibilities of

improving classroom instruction through this project. With the opening of school in September 1958, teams of two teachers were assigned to teach the equivalent of three regular classes (85-100 pupils) scheduled to meet at the same period of the day. With the additional assistance of two teacher-aides, the personnel of each team was made up of four adults: one team-leader, one less experienced regular teacher, and two teacher-aides. These aides were assigned to work in a clerical capacity four hours each day—the equivalent of two preparation hours in addition to the two class hours.

Selection of Subject Area. During the first year, the subjects chosen for implementation of the Staff Utilization Program were twelfth-grade American Government and Problems (two sections), tenth-grade General Science, and tenth-grade Biology. During the second year, there were two sections of U.S. history (grade 11) and two sections of biology. These classes were scheduled during the second and third periods, respectively, so that teachers and aides were free to conduct staff planning conferences during the fourth period. One section of U.S. history was a regular class (90 pupils) and the other section was an advanced class (70 pupils).

Orientation of Teachers, Students, and Parents. Teachers assigned to the program attended a pre-school workshop and other workshops held during the school year to become familiar with the objectives of the program and to share ideas regarding teaching techniques and methods. Pupils, however, were not formally oriented regarding the program. Rather, the selected classes were involved in the program as routinely as possible to ensure pupil acceptance of class organization and activities as normal classroom experiences. When the two sections met together for the first time (actually 3 classes), the procedure was accepted by the pupils without any question or objection. The use of the term "experiment" was avoided, but the pupils were given an opportunity to understand that some of the teaching would be done in sessions where both large classes would meet together with the two teachers. Fortunately, a Little Theater classroom with a seating capacity of 120 pupils was available for these joint sessions.

Curriculum Design and Methods

How Different from Regular Classes. Learning experiences implemented in the staff utilization classes followed the sequential patterns and involved the use of the materials recommended in the appropriate city school's teaching guides. Because of the difference in the ability levels of the classes involved, methods and technique utilized in each class differed more than did the total pattern of instruction as compared to methods used in regular classes being taught outside the framework of the experiment. In each of the classes, however, a more flexible class organization was employed than is customarily used in regular classes. Thus, large group, ordinary class grouping, and small groups organizations were utilized. Generally, large groups met for previews of material, reviews of assigned material, related audio-visual presentations, and

reports prepared by small groups. Ordinarily, class organization was used for supervised study, discussion of specific material, and testing. Small groups were formed on the bases of demonstrated pupil needs and interests. Such groups, generally supervised by the aides, prepared presentations for large groups, did remedial work, and engaged in individual and group research in specific areas of the subject concerned.

Essentially, the work of the regular class was organized into specific and related written weekly assignments based on units provided in the teaching guide. Such written work included a basic mandatory assignment as well as optional above-average and superior assignments. All discussions were related to specific blocks of work as were the pupil presentations.

Methods Found Most Suitable for Small, Average, and Large Groups. In the large groups, audio-visual presentations including films, filmstrips, and tapes were used. Also guest speakers were invited to speak. Introduction to large units with lecture released the teacher for occasional research. In the average size groups, review, discussion, laboratory, or reference work was employed. In small groups review and discussion were also used, and tutorial assistance for slower students could more easily be accomplished.

Local Appraisal at Lincoln

Regarding the value of team teaching for the personnel involved, probably in-service training of new and/or inexperienced teachers would be the most valuable. In-service training of aides expecting to become teachers also is of value. Regarding the experienced teacher, the opportunity to try new methods and techniques, to experiment, to share ideas with other adults in the team approach is stimulating and of considerable value. For teachers and aides alike, delegation of areas of responsibility regarding planning, evaluation, teaching, scheduling, and clerical tasks, when successful, permits a division of labor resulting in greater efficiency of operation.

The values of such a program to pupils are primarily in affording opportunity for the more capable student to receive encouragement and assistance in enrichment activities; and, for the less academic student, the opportunity to receive tutorial assistance in a small-group situation. Because of lack of comparative standardized test scores, one cannot objectively state that a program of this kind leads to greater mastery of subject material. However, pupils appeared to do as well or better than pupils in regular classes.

Major problems and weaknesses apparently inherent in the program include coordination of effort on the part of teacher and aides; difficulties in organizing large, average, and small group activities into a coherent program which effectively meets the needs and interests of individual pupils as well as the over-all objectives of the instructional program; difficulties in identifying the needs and interests of pupils involved in the

program; and problems related to evaluation in terms of pupil achievement as compared to achievement in regularly organized classes.

Related to the above are problems regarding availability of greater classroom space as required for effective large- and small-group organization and activities and difficulties in obtaining audio-visual equipment and materials as required.

Insofar as team teaching can really provide for flexibility of approach and organization resulting in vital learning experiences, the program can justifiably be continued and incorporated into the total school program. As previously described, effectiveness of the program is dependent on a variety of variables requiring close control. In a general sense, team members felt that the program did provide a relatively well-balanced program of instruction during the two-year experiment.

Inexperience of the team-leader as a team teacher, class load (number of preparations) of the teachers, and problems related to classroom space and availability of audio-visual materials did, however, seem to have an adverse effect on the program. Fortunately, the aides assigned to the program were efficient and willing to undertake responsibilities outside the area of clerical assistance. Many of these problems and objections can be eliminated or minimized in planning for the future.

In academic classes, total class load for a particular team ought to be no greater than 95 pupils, or about three regular classes. Greater numbers of pupils involved in such a program make problems of identification of individuals and individual needs and interests difficult. Also, prior to scheduling of team teaching within a school, a careful study ought to be made regarding the availability of classroom facilities for effective large, ordinary, and small group organizations.

SAMUEL GOMPERS JUNIOR HIGH SCHOOL

Enrollment: 983
Principal: Mr. Miles Max Miller
English-Social Studies Seventh Grade—180 students
1 team leader
1 teacher
Mathematics-Science Eighth Grade—96 students
1 team leader

The pooled opinions of teachers and administrators at Gompers are reflected in the following schematic arrangement:

These developments and ideas were incorporated in the team operation during the second year of the project.

More group work, small to large
More attention to individual interests
More use of audio-visual aids
More use of oral presentations by students
More emphasis on student research

These methods were found suitable for small, average, and large groups:

Small groups

- Rapid textual coverage
- Research projects in library for fast learners
- Individual assistance for slow learners
- Buzz sessions
- Experiments and projects
- Panel presentation preparation

Average groups

- Study periods
- Individual assistance (less than in small groups)
- Experiments (less effective than in small groups)
- Research
- Reports
- Panel presentations
- Audio-visual aids

Large groups

- Lectures
- Outside speakers
- Films
- Audio-visual aids

As a result of the two-year experimentation, these aspects of team teaching seem to have been most profitable:

- Interchanges of ideas—
  - Within teacher team
  - With aides
  - With students
  - With administrators, coordinators, and supervisors
- Professional growth
- Grouping techniques learned
- Audio-visual aids acquired
- Assistance in routine duties by aides—
  - Grading papers
  - Taking roll
  - Recording
  - Supervising students
  - Working on bulletin boards

Here are some of the major problems or weaknesses which have been encountered in team teaching:

- Inadequate physical space
- Too-cramped student seating
- Equipment shortages
- Increased teacher time and work load
- Increased teacher responsibility
- Student acceptance of aide

At Gompers these opinions are shared:

Cooperation planning is more creative planning
Quantity teaching can be quality teaching—
Standard pupil teacher ratios have received too much emphasis
Master teaching "know how" reserves greater recognition
Experiment is the life force of the expert; experience is experiment put through its paces

In conclusion, the team approach is as valuable a training situation in seventh as in eighth grade. Pupils apparently progressed as well when taught in a large group as in a conventional classroom. The facilities for teaching large groups need to be available. Team teaching is not feasible except for enthusiastic, imaginative, and willing participants. In the classes of two teachers and two aides, other authoritative leadership was never found necessary. The operation was more of a group action of equal status. The teachers in a team situation need to work more hours, particularly at the beginning of a course, than if assigned to conventional classes. Possibly it is the sense of responsibility that makes for extra hours. Planning definitely takes more time and details were encountered that are not present in a normal class situation. The aides help with class papers and share the knowledge of the necessary responsibilities, but they do not work beyond their four hours. With sufficient equipment and adequate facilities team teaching with the assistance of aides is a very suitable way of teaching many subjects at the junior high-school level.

HORACE MANN JUNIOR HIGH SCHOOL

Enrollment: 2,611
Principal: Mr. C. Russell Henzie
Drama Team—121 students
1 team leader
1 aide
World Geography Team—94 students
1 team leader
1 aide

Curriculum Design and Methods

Drama. The project lends itself much more effectively to a flexible organization and programming of student activity within the regular school period. Every youngster is provided an opportunity to participate individually, in groups, and as a class every day. There have been as many as ten separate groups working effectively at the same time.

World Geography. The content of the instructional programs in both the Staff Utilization classes and the regular classes is basically the same. The chief difference might be the necessity and, consequently, the ability to break down into the smaller discussion and study groups. This has especially afforded the opportunity to delve more deeply into the content of the course of study. The groups organized on an interest plus ability basis have provided self-motivation and true enrichment opportunity.

The possibilities for individuals and for small groups of individuals to use the facilities of the library for research have been enhanced by this structural organization. The instructor has had an opportunity on a planned basis, to meet with individuals and small groups of students with common interests and projects for longer periods of time and with greater effectiveness.

Methods Found Most Suitable for Small, Average, and Large Groups

Drama. The general objectives of drama have been presented and discussed with the total group and then on most occasions with half of the group at one time to allow for group participation. The many small groups afford an opportunity for everyone to be participating in some type of a project. Many times it would be a play, skit, makeup, stage, design, radio plays, television plays, *etc.* Committees were organized to investigate the various forms of drama, beginning with the ancient, medieval, modern, and encompassing Oriental and European. The program will conclude with a coverage of the modern theatre.

World Geography. The large group lends itself primarily to the more formal aspects of any classroom. This would include class lectures, demonstrations, total group assignments, tests, and the daily business of a class. The smaller groups of from 12 to 15 lend themselves more readily to informal discussion, questions, project problems, a variety of problem solving, *etc.* This, too, has given rise to the opportunity for the students to assume leadership and chairmanships. On many occasions, the small group will then break down into sub groups of three or four pupils each. On many occasions, these small groups are preparing reports or seeking answers to problems that they will later report to the larger group.

Achievement in Subject Areas

Drama. One of the most influential factors in the achievement of this year would be the ever increasing enthusiasm of the students as they have become personally involved in some phase of the drama activities. The instructor has found his noon hours and afternoons constantly in demand by the students for more time and more attention. It would be natural, consequently, to assume that this had led to a higher level of achievement in the field of drama. The theory or academic side of drama has been stressed with success.

World Geography. The level of achievement of the students has been increased by the method of instruction and handling of the large classes. There have been few if any discipline problems in the large classes. There has been much greater opportunity for individual activity and success.

Problems Inherent in Team Approach

Drama. The assistance of the aide has been an offsetting factor for the over-sized class and the aide has been a means to put into more efficient operation the effectiveness of small groups. This, however, does not offset

the additional preparation, planning, and pressure of individuals wanting even more attention and more opportunity to be heard and assisted.

World Geography. Again there has been the unqualified feeling that this program has provided an opportiunity of doing a better job in meeting the needs of all types of students. The instructor feels that this has allowed him the opportunity of doing a better job than at any time previously.

MABEL E. O'FARRELL JUNIOR HIGH SCHOOL

Enrollment: 1,598
Principal: Dr. William Jack Stone
Typing Ninth Grade—80 students
1 teacher
1 aide
Mathematics-Science Ninth Grade—100 students
1 team leader
1 teacher
2 aides
English Ninth Grade—100 students
1 team leader
1 teacher
2 aides

Mabel E. O'Farrell Junior High School, in southeast San Diego, opened its doors in September as a new plant to serve a large geographical area containing many new housing areas mushrooming in and about relatively new neighborhoods, farming areas, naval housing projects, and a few smaller, long-established communities. Its enrollment is 1,598 and its basic organization is what is known as a "small school" or school within a school. In other words, half of the enrollment at each grade level is scheduled to half of the faculty at that grade level, resulting in six small schools, each with its own counselor, with each administrator supervising two small schools. Each student in the school has one teacher for a two-period time block which consists of either English-social studies or mathematics-science. The teacher of the two-period block is known as the counseling teacher for the students in the block.

Description of Teams. Three staff utilization teams have been in operation during the course of the year 1959-1960. A fourth, girls physical education, was in operation during the first semester only.

The *typing team,* composed of a team leader and one non-certificated aide, worked with 75 to 80 students in each of two class periods. The aide worked a total of four hours per day, two of which were spent in the classroom and two in clerical work related to the classroom.

The *English team,* consisting of two certificated teachers and two aides, worked with two groups of ninth-grade students, each group including approximately one hundred students.

The *mathematics-science team* involved approximately one hundred ninth-grade students in each subject under the direction of two certificated teachers and two aides.

Selection of Subject Areas and Teachers

An important factor considered by the local site administrators in the selection of subject areas for staff utilization teams included placement of the teams in various subject areas so that each team could be supervised by one of the vice principals.

Curriculum Design and Methods

The *typing team* course is different from the regular typing course because of the physical setup. Two typing rooms are combined as one large room by an interconnecting door. Operating two rooms as one large class presented two problems: *first*, providing adequate individual help to all students; *second*, the need of communicating verbal instruction to all students at one time. These two problems were solved by provision of an electronic communication system comprising a speaker in the center of the ceiling of each room, an amplifier and microphone, a connecting tape recorder, and a built-in record player. The speakers distribute high quality sound uniformly throughout the rooms. The tape recorder makes it possible to record well-organized verbal instruction of typing technique and problem solving. Students listening to the taped instructions find that these lessons are better prepared and easier to follow than direct verbal instruction. While the tape is in use, the instructor uses the time saved for individual help and typewriter maintenance. The built-in record player provides a means for conveniently playing rhythm records for typing skill and mood music before and after each class.

The *English team* differed from that of a conventional class organization in student number, teaching staff, teaching methods, grouping patterns, and, most advantageously, in flexibility. Clerical work, objective evaluation, and personal help with student research were provided by two very capable aides from San Diego State College. Both college students were preparing to enter the program. Aides were utilized in routine checking of student work. Compositions could be checked for simple grammatical content, thus relieving teachers from time-consuming work. Teachers could then evaluate compositions in less than half the time normally required.

The *mathematics-science program* might be better understood by dividing it, for explanation purposes, into the two subject areas.

In the mathematics program, two broad ability groups were formed as the result of testing. These two groups were further divided into three fluid groups. One certificated teacher took the more advanced students for instruction in Algebra 1-2. The remaining students, concerned with General Mathematics 1-2, general mathematics for ninth-grade pupils, were under the supervision of the other certificated teacher.

Additional Developments

For the typing team, additional developments included the use of two adjoining classrooms, the provision of an electronic communication system, a connecting tape recorder, and a built-in record player.

For the English team, the second year of the project had given the teachers an opportunity to experiment with different types of groupings, to increase student activities to include more enriching activities such as drama and speech for the advanced students, and to offer more individual aid in reading and composition for the slow student. Emphasis on creative composition with the rapid learners and careful examination of their work were possible with the aides and team organization.

Classroom Supervision

Each of the four teams was placed within the school directly under the supervision of one of the vice principals. Thus, the ninth-grade English team was guided by the vice principal in charge of English-social studies basic courses. The vice principal in charge of the ninth-grade mathematics-science basic courses supervised the mathematics-science team. The girls physical education team was supervised by the vice principal supervising the girls physical education program, and, in a similar manner, the vice principal in charge of business education supervised the typing-basic business team. Supervision by the vice principals, as well as the principal, included visiting the teams periodically on a frequency of at least every second week, planning conferences held with team leaders, participating administratively in team staff meetings for the purposes of planning instruction, and assisting in securing necessary instructional supplies and materials.

Efforts were made to see that supervisors and teacher consultants from the central office having interest in the particular subject participated in the development of planning and evaluation of activities. The district project coordinator regularly, once a week, visited all the teams and conferred with team leaders.

Achievement in Subject Areas

In the *typing program*, the advanced students achieved more and better results in the team class than students with equal ability in the typical class. Approximately half of the students were in team classes with an equal range of ability in team and non-team classes. Of the twelve most skillful typing students with a typing speed of 50 w.p.m. or above, with three errors per hundred words or less, only one of these students was in a regular class. Among advanced students, there was more excitement about subject matter, and more competition. There was the feeling that the work was significant and important in the team classes. The students indicated that there was more opportunity to do independent thinking.

Throughout the year the English teachers continually evaluated prog-

ress in expository and imaginative writing, reading and reference skills, understanding and appreciation of literature, and oral communication through tests and written work. The only other measure of achievement open to them was the subjective evaluation that all other teachers use. The teachers of the project, using subjective evaluation, felt student progress was equal if not better than that of a regular class.

Problems Inherent in Team Approach

The chief problems encountered were those of a physical nature. Facilities were not always ideal, and problems that were unavoidable occurred in opening a new building. Team teachers with preparations for four and five classes or periods per day and no released time were handicapped in the areas of planning, providing materials, engaging in research, and other necessary work within the team organization. The teachers also questioned at the end of the experiment if the close teacher-student relationship has been diminished to an extent.

Conclusions at O'Farrell

In conclusion, one might well raise a question as to the extent to which the teams achieved the over-all objectives of the project. The extended use of existing staff obviously occurred in all four teams. Seven certificated teachers were able to "cover" the teaching assignments which would normally require the services of ten teachers.

It was the feeling of team leaders that progress had been made toward the recruitment of new personnel to the teaching profession as reflected by the attitudes and expressed opinions of the teaching aides. Aides had an opportunity to work in a regular class situation with youngsters at the very outset of their entrance into the formalized teacher training program. Teachers gained a new insight into the value and importance of democratic planning and the necessity for developing skills of democratic participation on the part of students. This approach to teaching forced the teacher to explore, and, as a consequence was stimulating and served as an incentive to try to do a better job.

There was a general feeling among all that students, teacher aides, and certificated teachers were all working toward a common goal. Probably the most significant conclusion which might be drawn is that the operation during the two years had been successful as evidenced by the fact that students expressed a desire to continue with this type of instruction, teacher aides indicated regret in the necessity to leave the program, teacher team members and leaders indicated the desire to continue in the program, and other teachers on the staff were interested in participating in teams next year.

In the principal's estimation, the team approach represented a desirable step forward not only in the local school but in the field of education in general.

Official Evaluation of the Total Project*

* The following portion of this report is derived from the official evaluation made by Dr. George A. Koester. Professor Koester was not a participant in the experiment or was he affiliated with it except in the role of a qualified outside auditor.

The objective of the project was to improve the quality of instruction by means of a team approach, extending the use of skilled teachers to a larger group of pupils and using the services of noncredentialed aides in lieu of services of regularly certificated teachers.

Personnel involved in planning and implementing the program agreed that a subjective appraisal, designed to identify strengths, weaknesses, and outcomes of the project while it was in process, and making the results known to the participants as soon as possible, was preferable to an appraisal of the outcomes at the end of the year. Recommendations resulting from this continuous appraisal were made at in-service workshops held at intervals during the year.

Information and data were obtained from the following sources: (1) observation of the classes being taught by the teams; (2) structured interviews with teachers; (3) structured interviews with the aides; and (4) time-diaries prepared by each teacher and each aide for a one-week period. The results of the appraisal suggested the following indications of improved instruction and better staff utilization:

1. It was possible to organize team teaching with larger classes in such a way that student learning was directed in lectures, demonstrations, and discussion by the member of the teaching team who was best qualified to conduct that activity.
2. The aides relieved the teachers of many routine and clerical responsibilities which provided additional time for planning, preparation, and instruction.
3. The ability of the aides to assist in supervised study and other activities made it possible for the credentialed teacher to work with small groups and individuals on special problems.
4. Working as a team stimulated teachers to do a more effective job of teaching, not only in team classes, but in other classes as well. The teachers felt that they had grown professionally because of this experience.
5. There was some indication from reports of the teachers and the principals that there were fewer disciplinary problems in the team classes than in other classes.
6. Even though their classes were larger, the teachers felt they had covered at least as much material as they did when they taught the same subject to smaller classes. Many felt they had covered the material more thoroughly and had provided more adequately for the individual differences of pupils.

The First Year

The procedures used in the first-year evaluation of the project were designed to serve three functions:

1. A continuous appraisal throughout the year in order to make recommendations which might be implemented immediately to improve the program.

2. To provide information on the basis of which modifications might be made in planning the second year of the project.

3. To evaluate the outcomes of the project in relation to the objectives and discussion by the member of the teaching team who was best qualified to conduct that activity.

There were some problems encountered during this first year which the teachers felt were sufficiently serious to prevent them from doing as well as they might otherwise have done in team classes:

1. Adequate facilities for meeting large groups were not always available; most school plants have only a few rooms which can accommodate large classes.

2. Even though the teachers were relieved of many routine and clerical responsibilities, they felt that they needed to give extra time for team teaching because of the demands or organization of team activities and supervision of aides.

3. In some cases the class schedules of team teachers were such that they did not have a common preparation period, a situation which reduced the efficiency of team planning and interfered with the development of a feeling of working as a team.

4. Teachers were willing to try new approaches to teaching, but in some cases were handicapped by not having audio-visual equipment and a variety of materials readily available.

5. Class size made it difficult for teachers to know their pupils as well as they would have liked.

It was not possible to eliminate all of these difficulties in the second year of the project. Careful planning did reduce the extent to which they interfered with the effectiveness of team teaching.

The Second Year

The evaluation of the second year of the project was designed to obtain more objective evidence regarding the outcomes which were inferred from the first-year evaluation. This included the use of questionnaires to get the reactions of both pupils and teachers to a number of facets of team teaching. Items on the questionnaires were selected on the basis of the observed outcomes of the first year of the project.

The pupil questionnaire contained twenty items phrased in terms of opportunities for various types of learning experiences. The pupils were asked to indicate whether they felt there were *more, less,* or *about the same* opportunities for these experiences in the project classes as in regular classes. On three additional items, the pupils were asked to indicate whether they *liked, disliked,* or were *indifferent to:* "being in a large class," "having more than one teacher in the classroom," and "having different teachers for different activities."

The teacher questionnaire included eight items asking them to indicate whether they felt there were *more, less,* or *about the same* opportunities to provide certain teaching-learning conditions in the project classes as compared with other classes. The content of these items was closely related to items on the pupil questionnaire in order that some comparisons of teacher and pupil responses might be made.

TABLE I—Teacher questionnaire and percentage of teachers who responded in each category

Results of Teacher Questionnaire

Figures show the percentage of teacher responses in each category for each item.

There may be MORE, LESS, or about the SAME opportunity for certain types of activities in the project classes when compared with other classes. Will you please respond to each statement by circling the appropriate letter:

M	*L*	*S*	M—MORE opportunity L—LESS opportunity S—about the SAME opportunity
81	5	14	1. Challenge superior students
67	19	14	2. Appropriate pacing for slower pupils
76	19	5	3. Individual help and remedial work for pupils who are in need of it
33	19	48	4. Get pupils to participate in discussion and other class activities
62	5	33	5. Get pupils to carry out self-directed learning activities
95	0	5	6. Use a variety of approaches to instruction
81	0	19	7. Use a variety of materials for the class
53	14	33	8. Help pupils learn how to study and do independent research

Respond to each of the following statements by circling the appropriate letter:

A	*B*	*C*	*D*	
0	5	57	38	9. In planning class activities, the time I have spent is: A. less than; B. about the same as; C. greater than; D. considerably greater than for other classes.
0	14	43	43	10. In preparing materials for this class, the time spent is: A. less than; B. about the same as; C. somewhat greater than; D. considerably greater than for other classes.
14	38	48	—	11. With regard to classroom control, I have found: A. more; B. fewer; C. about the same number of behavior problems among the pupils.
0	38	48	—	12. I have tried new methods of organization and teaching in the project classes which I have been able to use: A. seldom; B. occasionally; C. very often in my other classes.
0	67	33	—	13. I believe that participation in a teaching team has resulted in: A. no; B. some; C. a great deal of improvement in my teaching in all classes.

Summary of Questionnaire Results

1. Teacher and pupil responses on the questionnaires suggest that the quality of instruction was superior to single-teacher classes, especially in terms of: use of a variety of methods of teaching, use of a variety of instructional materials and sources of information, more adequate provision for individual differences of pupils, self-directed learning activities on the part of pupils, and fewer disciplinary problems.

2. The pupils reacted rather favorably to having a "team" of teachers and to being in larger groups for part of their activities.

TABLE II—Pupil questionnaire and percentage of pupils who responded in each category

Results of Pupil Questionnaire

Responses of all pupils (N = 1,535) on each item. Figures show the percentage of pupils answering A, B, or C to each item.

In this class, the opportunities to do certain things may be MORE, LESS, or about the SAME as in most other classes. Mark your answer for each statement as follows:

A	B	C	
			A—if you think there are MORE opportunities B—if you think there are LESS opportunities C—if you think the opportunities are about the SAME
31	32	37	1. To assume some leadership in classroom activities
44	21	35	2. To participate in discussion and other class activities
59	19	22	3. To work with other pupils on committees or in small groups
30	25	45	4. To meet in comfortable, pleasant classrooms
24	36	40	5. To be unnoticed when you misbehave
57	9	34	6. To make friends with many other pupils
47	17	36	7. To enjoy the subject and the class work
36	17	47	8. To be successful in the work required of the class
35	21	44	9. To learn how to study effectively
51	12	37	10. To learn to think for yourself
44	22	34	11. To do things in which you are personally interested as part of the class work
34	16	50	12. To learn how to behave properly
57	12	31	13. To be challenged to do your best
47	20	33	14. To use printed materials besides the textbook
47	22	31	15. To use the library in connection with the subject being studied
55	18	27	16. To hear reports from other pupils
36	24	40	17. To hear speakers from outside the school
32	33	35	18. To get individual help with class work when you need it
40	17	43	19. To check your own progress in the class work
38	15	47	20. To understand the purposes of assigned class work
			For each of the following statements, mark your answer as follows: A—if you LIKE the situation described B—if you DISLIKE the situation described C—if you are INDIFFERENT—you feel you can't really say you like or dislike the situation described
48	29	23	21. Being in a large class
59	20	21	22. Having more than one teacher in the classroom
51	26	23	23. Having different teachers at different times or for different activities

3. Team teaching has promoted in-service professional growth on the part of the teachers, particularly for the less experienced members of the teams.

4. There are several conditions which appear to be essential for optimum results from this type of team teaching program:

a. Adequate physical facilities for meeting large classes, together with classrooms for intermediate size and small group meetings

b. Available audio-visual equipment and materials, and library facilities

c. Released time for the team leader to coordinate activities and to plan and prepare materials

d. Consultant services to assist teacher in organization of the teaching team and the class

e. Aides who have sufficient background and ability to assist in the supervision of pupil activities as well as to perform clerical duties.

Results of achievement testing

Reactions of the participants and observations by administrators and consultants pointed out the high level of interest and enthusiasm of pupils in the project classes, the opportunities for self-directed learning and research, and the professional growth of the teachers. Subjective appraisal by the teachers indicated that the achievement by pupils was at least equal to the achievement by comparable groups of pupils in regular classes. A limited program of achievement testing was used to supplement the judgment of participants and observers.

It was not feasible, because of time and budget limitations, to carry out a complete achievement testing program. No attempt was made to select pupils in the project classes on a random basis or to match project classes with other groups. Therefore, only descriptive statistics have been used to show the results. Test results for five of the project classes are summarized: junior high-school English, mathematics, and science and senior high-school English and American history.

English classes. The ninth-grade English class was given the *SRA Reading and Language Arts Test,* covering four areas: reading comprehension, vocabulary, usage, and spelling. No comparison group was tested, but scores are reported in grade placement, so they do represent an estimate of progress in each of the four areas. The pre-tests were given in November and the post-tests were given in May.

The median grade placements for the 169 pupils for whom pre- and post-test scores obtained were as follows:

	Reading Comprehension	*Vocabulary*	*Usage*	*Spelling*
Pre-test	9.3	8.8	8.8	9.3
Post-test	10.2	10.2	9.5	9.8

Assuming that this group was comparable to the norm group, the expected median grade placement on the pre-test would have been approximately 9.2; and on the post-test, approximately 9.8. The results indicate that, in all areas except spelling, the median gain is at or above expectancy.

The tenth-grade English class was given the *Cooperative English Test, Form T.* The test was also given to forty-nine tenth-grade pupils in other classes. The medians, in scaled scores, were as follows:

	Project Classes		*Other Classes*	
	pre-test	*post-test*	*Pre-test*	*Post-test*
Vocabulary	45	53	46	46
Reading speed	47	59	46	50
Mechanics of expression	40	46	39	41
Effectiveness of Exp.	41	47	40	43

Although no attempt had been made to match the two groups, the median for the project classes was within one point of the median for the regular classes on the pre-test. In all four areas, the differences in the medians on the pre- and post-tests were in favor of the project classes.

Mathematics and science. The ninth-grade mathematics and science classes were given the *Cooperative Mathematics Test* and the *Cooperative Science Test.* Scores are reported in percentiles. When compared with the norm group, the median scores of the classes, expressed in percentiles, were as follows:

	Pre-test	*Post-test*
Mathematics	30	52
Science	40	52

These results indicate that the project classes, at the end of the school year, compared favorably with the norm group in their achievement.

American history. The *Cooperative American History Test* was given to the eleventh-grade American history class. Pre-test and post-test scores were also available for 48 pupils in other American history classes in the same school. Medians, in scaled scores, were as follows:

	Pre-test	*Post-test*
Project classes	44	50
Regular classes	39	44

The results indicate approximately the same gain, as given in scaled scores, for the two groups, but the difference in the pre-test median scores make comparison difficult.

Summary of test results. The test results summarized are for five of the project classes, three from the junior high school and two from the senior high school. They represent four of the subject matter areas. Although lack of adequate control groups made comparison difficult, the results tend to support the judgment of the teachers of the project classes that the achievement level of the pupils was at least as high as for other classes of comparable ability.

Summary and Conclusions

The primary objective of the Staff Utilization Project was to improve instruction through team teaching. From observation of the program, reactions of participants, and results of achievement tests, the following inferences can be made:

1. The achievement of pupils appears to be equal to or greater than that of pupils of comparable ability in regular classes.
2. Pupils have more opportunities to develop the ability to do independent research and to engage in self-directed learning experiences.
3. Teachers have more opportunities to meet the differential needs of high ability and low ability pupils, for enrichment and remedial work.
4. Professional growth of the participating teachers was one of the most important outcomes of the project.
5. There are a number of different ways in which teams might be organized and function—no one best approach was identified during the two years of the project.

The following recommendations are made for consideration as team teaching is continued or extended:

1. Aides selected should have sufficient ability and background to be capable of active participation in the teaching team, not just clerical workers.
2. Wherever possible, construction and remodeling of classroom facilities should be designed to provide space for large- and small-group activities with minimal movement of pupils as classes are reorganized.
3. Some released time should be made available for team leaders in order to develop more efficient team instruction.
4. Consultant services should be available to team teachers, especially to assist them in learning how to function as a team, and also in learning how to work more effectively with small groups.
5. Continuous evaluation should be encouraged as new approaches to team teaching are developed.

Basic to the success of this project were the classroom teachers. Working as a team stimulated the teachers to give extra time and effort to their instructional responsibilities. They were willing to try out new ideas and new approaches to teaching. They were not discouraged if some of their ideas did not succeed as well as they had hoped.

The teachers developed these attitudes because of support and encouragement from all school officials who were concerned with the project. Throughout the project, building principals, the coordinator of the project, consultants, and other administrators gave their attention to the development of this attitude of freedom for experimentation. Teachers were reassured that all aspects of the evaluation were for purposes of evaluating the progress of the team teaching project, not an evaluation of the competence of individual participants.

The successes of the project can be attributed to a very high degree to this feeling that the project as a whole was a team project with the activities of the teams coordinated through the administrators of the project, but not directed by them.

CHAPTER XV

South Bend, Indiana, Develops Educational Broadcasts of Group Guidance

KENNETH W. REBER

THE report which follows outlines the structure of the group guidance program in the senior high schools of South Bend in 1957-58 prior to the implementation of the experimental project, throughout the two years of the experiment and during the current year. The report marks rather clearly the efforts to obtain better utilization of staff time through educational broadcasting, multiple- or large-group instruction, and the use of clerical assistants. The group guidance program as it is functioning this year, one year after the experiment, places these in perspective in relation to staff acceptance and in relation to the results obtained from the evaluation instruments.

GROUP GUIDANCE PRIOR TO THE EXPERIMENTAL PROJECT

In three of the four high schools, each student attended a group guidance class one period a week during his *B* semesters. The time was taken out of his regular study period. Classes were of normal size, twenty-five to thirty-five students, and were taught by the grade-level counselors. Each counselor spent approximately ten hours a week teaching group guidance classes and probably spent an equivalent amount of time in preparation and in class-related activities. Resource materials were available from the central curriculum office, but each counselor developed his own program.

In the fourth high school, a fairly extensive home-room guidance program had been developed under the direction of the school guidance coordinator. The coordinator, in addition, planned convocations and special group meetings for each grade level. Both of the plans referred to above were generally satisfactory. It did appear, however, that some of the programs lacked balance, the city-wide group guidance program could not be articulated or defined, and there was a growing need to reduce the counseling loads.

There were two ways to provide more time for individual counseling in the plans referred to above: increase the number of counselors or drop

Kenneth W. Reber is Director of the Division of Special Projects, School City of South Bend, South Bend, Indiana.

the group guidance program. The first was feasible except for the shortage of trained counselors and the expense of adding additional staff members. The second would represent a curtailment of guidance services that were thought to be valuable to the students. It was this problem that prompted the central administrative staff and the high-school principals to seek a new method of providing group guidance instruction.

The First Year of the Experiment

During the first year of the experiment, no regular group guidance classes were scheduled for selected groups of ninth- and eleventh-grade students. Instead, the home-room period was extended each Tuesday morning, and the students listened to radio broadcasts prepared especially for their grade level. The home rooms were increased from the usual thirty-five students to eighty or more, depending upon facilities, and each home room was supervised by a team of two or three teachers. In addition, a clerical assistant was assigned to each guidance office to help implement the program and to relieve the home-room teachers and counselors of as much clerical detail as possible. The grade-level counselors in each school coordinated the guidance program with other school activities and worked with the teachers in preparing for the broadcasts and in follow-up and related activities.

Before each broadcast, the counselors and the home-room teachers received a guide which explained the purpose of the program and indicated the method of presentation and the understandings to be taught. The students each received a newsletter which explained the nature of the program, gave directions for their participation, and contained supplementary information. In some cases, tests or worksheets accompanied the broadcasts. The broadcasts were developed by the Division of Special Projects and were transmitted by the school system's own FM station. The selection of content for the broadcasts was arrived at after studying five principal areas: (1) the content of the old group guidance classes; (2) the results obtained from the Science Research Associates *Youth Inventory;* (3) questions sent in by students; (4) suggestions of various authors as found in guidance manuals and textbooks; and (5) suggestions from the school counselors.

Informal plans to evaluate the program were carried out. In general, there were few complaints from staff personnel in terms of objectives, program content, and educational broadcasting as such. An analysis of student worksheets and tests indicated that the students were listening to the broadcasts, were carrying out assignments, and were able to assimilate the information presented. There were, however, several problems. Briefly, these centered around poor accoustics in some rooms, malfunction in sound systems, teacher dissatisfaction with large home rooms, and teacher and counselor complaints of loss of personal contact with students. There was some dissatisfaction, too, with the lengthened home-room period

which caused the schools to run on a shortened schedule on days the broadcasts were presented. The general effectiveness of the program had been established, however, and plans were made to carry out a modified program in 1959-1960.

The Second Year of the Experiment

In the spring of 1959, the high-school principals recommended that the home-room period be extended to a half hour each day and that all activities resulting in a shortened morning schedule be confined as nearly as possible to the home-room period. This was approved by the Superintendent of Schools and by the Board of Education, and the school day was lengthened slightly for this purpose. The Tuesday morning home-room period was once again reserved for group guidance activities. Several modifications were made in the experimental design. The project was expanded to include all students in the four high schools in grades nine, ten, and eleven with the exception of control groups at one school. The schools returned to the normal size home-room groups, with a few large home rooms retained for further study, and the length of the broadcasts was reduced from thirty minutes to twenty. In the meantime, several rooms had received accoustical treatment, sound systems had been improved, and new programs were developed.

Because of the great number of broadcasts or tape recordings to be presented, it was necessary to use both the facilities of the radio station and those of the schools' central sound systems. This permitted two programs to be presented at the same time to different grade levels. The new programs reflected a growing consensus among staff personnel regarding the interests and needs of the students at various grade levels. More formal evaluative techniques were developed in an effort to measure the effectiveness of the group guidance program. The material that follows is related specifically, then, to the program as it was carried out in 1959-1960, the second year of the experiment.

Student Evaluation of Broadcasts

After each broadcast, five students from each home room, selected at random, rated the program on the factors shown below. The results are a composite of these ratings for the total number of broadcasts presented throughout the year.

1. Were you able to hear this broadcast well? *Yes* 5,254; *No* 892

2. Do you believe this broadcast has been of value to you? *Yes* 4,708; *No* 1,283

3. As a result of this broadcast, do you believe you will make any changes in your usual behavior, or in your attitude, or in your planning for the future? *Yes* 2,477; *No* 3,383

4. How would you rate this program in terms of subject matter and method of presentation? *Excellent* 640; *Good* 2,805; *Fair* 1,973; *Poor* 535

Student Comments in Relation to the Broadcasts

The students who rated the broadcasts had an opportunity, also, to make any comments they wished to make about a particular program. These comments were then evaluated and placed in the appropriate categories shown below. The number after each category represents the total comments made for all the broadcasts presented.

Good, Very Good, or Excellent Program	703
Fairly Good Program	281
Helpful or Very Helpful Program	249
Interesting Program	154
Some Parts Interesting	86
Good or Fairly Good Presentation	317
Good or Fairly Good Subject Matter	196
Couldn't Hear	166
Program Not Clear, Mixed Up	86
Poor or Very Poor Program	171
Not Interesting or Boring	166
Some Parts Not Interesting	98
Poor Presentation	164
Poor Subject Matter	63
Repetitious, Heard This Before	103
Information Not Needed or Not Meaningful	129
Need More Information	45
Need a Different Kind of Information	34
Program Summarized or Purpose Stated	74

Evaluation of the Project by Home-Room Teachers and Counselors

Home-room teachers and counselors were asked to indicate a degree of negative or positive response to selected factors in the experimental project. The factors to which they responded are shown here in abbreviated form. The numbers inserted in the various divisions of the scale represent the number of persons who checked in each division.

1. Do you think the programs have generally held the interest of the students?
   | 5 | 10 | 11 | 12 | 10 | 12 | 7 | 11 | 11 | 4 |
   not at all — to a high degree
2. Do you think the programs have been generally helpful to the students?
   | 7 | 9 | 10 | 7 | 12 | 8 | 7 | 6 | 17 | 4 |
   not at all — to a high degree
3. Have you observed desirable changes in the behavior of students that might be attributed to the radio broadcasts?
   | 35 | 15 | 13 | 4 | 2 | 4 | 5 | 0 | 1 | 0 |
   none at all — a great many
4. Do you find that students are better prepared for the individual counseling situation as a result of the radio broadcasts?
   | 12 | 5 | 10 | 1 | 2 | 4 | 7 | 8 | 4 | 3 |
   no better prepared — much better prepared

5. One purpose of the experimental project is to develop and carry out a plan for group guidance that will enrich the guidance program. Do you feel that the guidance program is being enriched?

| 16 | 5 | 8 | 4 | 4 | 10 | 4 | 13 | 6 | 7 |

not at all — a great deal

6. In your opinion, does this plan for group guidance result in a better utilization of professional staff time?

| 13 | 7 | 2 | 4 | 3 | 7 | 3 | 6 | 9 | 16 |

not at all better — much better

7. Do you feel that an adequate program of group guidance can be carried out in this way?

| 9 | 5 | 6 | 4 | 5 | 10 | 7 | 9 | 5 | 5 |

not at all adequate — very adequate

8. Would you approve of the retention of the general plan used for group guidance this year?

| 21 | 3 | 5 | 3 | 2 | 6 | 4 | 5 | 11 | 11 |

not at all — very much

One of the somewhat unexpected results of the questionnaire was the wide divergence of opinion found in relation to most of the items rated. It seems probable that the ratings were affected by the home-room teacher's definition of her role in reference to guidance, by the quality of the relationship that existed between counselors and teachers, by the physical arrangements for the programs in each school, and by the degree of technical difficulties that attended some of the broadcasts. A rather large negative response to items three and four was expected. Observable changes in behavior are not easily noted over a short period of time, and only the counselors could rate number four critically.

Comparison of Test Scores Between Experimental and Control Groups

Throughout the first semester of the 1959-1960 school year, students in one high school continued to receive group guidance instruction in classes taught by the counselors. Early in the school year, a fifty-item test of selected guidance factors was administered to the control groups and to the experimental groups. This test was repeated at the end of the semester. The hypothesis was, simply, that there would be no measurable change in the progress made by each group in factors related to the instruction they had received in group guidance. The *California Test of Personality* was also administered to the two groups as a further check on the results of the Division Test. The results of the Division Test are shown below.

The Chi Square test corrected for continuity was used to evaluate the null hypothesis that all groups were from the same population. With one degree of freedom, results greater than 3.84 or 6.64 are required to reject the hypothesis at the 5 per cent and 1 per cent level of confidence. The results are shown in Table 2.

The results bear out the hypothesis that the introduction of the experimental element would produce no measurable change in the populations

TABLE 1—Means and Medians of Test of Selected Guidance Factors

	First Test		*Second Test*	
	Mean	*Median*	*Mean*	*Median*
Tenth Grade				
Experimental School A	48.9	50.7	55.3	58.0
Experimental School B	53.7	56.2	58.7	61.5
Control School	50.3	52.7	55.5	58.1
Eleventh Grade				
Experimental School A	51.8	54.2	56.6	59.5
Control School	50.9	53.0	56.0	57.8

of the experimental and control groups. At the same time, an increase in the mean scores for all groups at both grade levels indicates growth in the understandings that were measured. When the Chi Square test was applied to experimental School B and the control school at grade eleven in the first test, it was found that the populations were not the same and could not be compared. Here, too, however, the results of the second test showed an increase in the mean scores for both groups. The results obtained from the *California Test of Personality* also showed no measurable differences in the groups referred to in Table 2.

The Use of Clerical Aides

In the original experimental design, it was proposed that a large home room be established, that this home-room group receive group guidance instruction by radio broadcast, and that a clerical worker be assigned to the home-room teacher to help carry out the details associated with the administration of a large home-room group. The actual experiment, however, included too many home-room groups, even during the first year, to make the assignment of a clerical assistant to a particular home room feasible. Instead, the clerical workers were assigned to the guidance offices, one to each school, and arrangements were made for them to relieve home-room teachers and counselors of as much clerical detail as possible. From the first, it was apparent that these clerks performed an invaluable function. A list of the duties performed by one of these clerks is shown below. The other clerks had similar responsibilities.

TABLE 2—Values of X^2

	First Test	*Second Test*
Tenth Grade		
Experimental Schools A and B and Control School	.367	.853
Eleventh Grade		
Experimental School A and Control School	.982	1.375

1. Served as receptionist for the guidance office
2. Distributed all materials to teachers and students originating in the guidance office or channeled through it, including the materials that accompanied each guidance broadcast
3. Collected all guidance materials from the home rooms, including worksheets and tests used in the guidance program and checked worksheets and tests
4. Handled all details associated with the preparation and maintenance of cumulative records, including the posting of test scores, subjects taken, and grades received
5. Did all filing for the guidance office
6. Made appointments for students to see the counselors and pulled students' files for use by the counselor
7. Typed report cards, daily attendance sheets, and period and semester reports
8. Checked student eligibility, prepared ballots for student elections, and helped tabulate the results
9. Assisted in the collection of fees and in fee accounting
10. Helped administer the standardized testing program

The Large Home Room

Although the high schools returned to the regular size home rooms in 1959-1960, three of the schools each maintained one large home room for further study. The counselors were asked to give their opinions of the large home-room type of organization at the end of the year. Shown below are excerpts from their responses.

School A 79 Students One Teacher in Charge

Because of the size of the home room, the teacher became almost a study-hall teacher as far as any close teacher-pupil relationship was concerned. By the time the business of the day was completed, the home-room period was over. The large home room, from an administrative point of view, functioned efficiently. However, we anticipate that it will be possible to return to the small home-room arrangment for this group next year.

School B 340 Students in the Auditorium Nine Teachers in Charge

We set up a home room in the auditorium for over three hundred students. The counselor was to be the over-all home-room teacher, and the other teachers were to divide duties as they saw fit. Since there was almost no communication system, very inadequate seating, constant passage through the room by people not involved with the ninth grade, and a number of other bad conditions, we left much latitude to the counselor and his group in working out arrangements. The teachers immediately broke the group up into conventional home-room groups, took separate seating blocks, and went into a conventional home-room organization without the conventional room arrangement.

School C 77 Students One Counselor in Charge with Clerical Assistance

The home-room group was organized in the usual manner. A president, vice-president, and secretary were elected to hold office for the school year. The home-room teacher delegated responsibilities to the officers, and committees were appointed as needed. The clerk handled such work as attendance, collection of fees, and the distribution and collection of student guidance

materials. She kept the cumulative record file up to date and did much of the clerical work associated with coding election cards. At first it appeared to the home-room teacher that the large group presented an unwieldy situation, one in which the teacher could easily become over-burdened with detail. However, as responsibilities were delegated, that difficulty was reduced. A large home room requires careful organization, and considerable effort is necessary on the part of the teacher in learning the individual qualities of each of a large number of students. It appears that the large home room can be successful if adequate clerical help is provided.

Despite some acceptance of the large home room, it is apparent that most of the teachers in South Bend prefer the smaller groups. It appears that this preference is based, at least in part, upon the teachers' conception of the role they are expected to play in relation to their charges. This role involves their having an intimate understanding of each student's interests, problems, and needs and an opportunity to counsel with the student in relation to these during the home-room period. This close relationship could not be maintained in the large group. In one school a compromise plan was evolved. Four or five students were added to each home room, reducing the number needed, and department chairmen were freed from home-room duty. This appeared to be feasible in view of the assistance provided home-room teachers by the clerical worker assigned to the guidance office.

The Cost of Operating the Experimental Program

The cost of operating the experimental group guidance program in 1959-60 for nearly 5,000 high-school students was $30,000, exclusive of the time spent in the program by the counselors and home-room teachers. This sum paid the salaries of the two professional guidance workers who prepared the forty-two broadcasts and accompanying materials, the salaries of one full-time and one half-time secretary assigned to the Division of Special Projects that prepared the broadcasts and implemented the project, and the salaries of three clerks assigned to the guidance offices in three schools, as well as provided for such supplies as were needed to carry out the experimental program. It is expected that subsequent costs will be substantially less. Most of the tapes that have been developed should be usable for two or three years without revision. The salaries of the clerks assigned to the guidance offices will be paid from regular school budgets, and initial outlays for tests, tapes, and equipment will not need to be repeated for some time.

The Year Following the Experimental Project

After a careful study of evaluations and costs and after discussion with staff members associated with the experimental project, the school administration asked that the program be modified to include tape recordings, convocations, and home-room activities. Committees were appointed to decide upon the specific emphases to be included at each grade level and to decide upon the best means of carrying out each program chosen. The committees selected several of the tape recordings that were used in the 1959-60 program and asked that several new ones be developed. They

decided that some activities might be better handled in convocations and that still others should be carried out in the home-room session. The group guidance program has been structured and defined, the number of sessions has been reduced to twelve or fourteen at each grade level, and there is a more uniform program in the four high schools.

The program is still considered to be experimental, and the Division of Special Projects will again assist in its implementation. A brief outline of the programs for the four grade levels and for the four high schools is shown below.

Grade Nine

1. Tape—America Goes Back to School: orientation program
2. Convocation—Your High School: new opportunities
3. Convocation—Your High School: traditions and activities
4. Tape—Nine Plus Four: choosing realistic but challenging goals
5. Tape—Sequoia or Sapling: what the high-school diploma means
6. Tape—The Branches: how electives are chosen
7. Tape—The Structure: information about the four-year plan
8. Tape—The Sketch: filling out the four-year plan form
9. Tape—Know-How: a look at study habits
10. Convocation—Developing Reading Skills
11. Home-room Session—How To Keep and Use a Notebook
12. Home-room Session—How To Get Homework Done
13. Tape—Next?: a consideration of ways to spend the summer

Grade Ten

1. Tape—America Goes Back to School: orientation program
2. Tape—Lights, Camera, Action: appropriate dress and behavior
3. Tape—Ups and Downs: dealing with fears and moods
4. Tape—Occupational Opportunities Within Broad Fields
5. Tape—Relating Interests and Abilities to Occupational Fields
6. Tape—Occupational Trends and Their Significance
7. Tape—Now What?: how to deal with failure
8. Convocation—The Co-operative Education Program
9. Convocation—The Co-operative Education Program
10. Convocation—Training Beyond High School
11. Tape—Full Stature: accepting responsibilities
12. Tape—On Trial: getting and holding the first job

Grade Eleven

1. Tape—America Goes Back to School: orientation program
2. Tape—Check Points: tests and what they mean
3. Tape—Halls of Ivy: college bound
4. Convocations—Pre-College Special Group Meetings
5. Tape—Time and Tide: the changing world of work
6. Tape—Main Traveled Roads: not college bound
7. Convocation—The Individual's Relationship to the Group
8. Convocation—Parent-Youth Relations
9. Home-room Session—The Automobile
10. Convocation—Leadership
11. Tape—At Ease: recreation and use of leisure time
12. Tape—On Being a Senior

Grade Twelve

1. Tape—America Goes Back to School: orientation program
2. Tape—They Also Serve: a look at success
3. Tape—Divergent Interests
4. Home-room Sessions and Convocations—Kuder Preference Records
5. Convocations—Pre-College Special Group Meetings
6. Tape—Men Working: the needs of industry
7. Convocations—Making a Living
8. Convocations—Jobs and Responsibilities
9. Convocations—Military Service
10. Convocation—Rackets and Con Artists
11. Tape—Millions of People: getting along with others

Changes in Organization and Methods of Instruction

The group guidance program that has been adopted this year is an outgrowth of two years of experimental study. The combination of tape recordings, convocations, and home-room activities takes into consideration the viewpoints of staff members who wished to maintain a close relationship with their students in the home-room situation and the results of such evaluative techniques as were applied throughout the study. The program itself provides counselors with more time for individual counseling and for coordinating guidance services in the schools. The continued use of tape recordings and the provision for convocations are indicative of the acceptance of multiple-group and large-group instruction in the group guidance area.

There are other tangible results. For instance, a new department was created to handle the experimental project. This department, the Division of Special Projects, has been retained and will continue to handle projects of a special nature. There has been some increased emphasis on the academic program in South Bend as there has been in other school systems, and able students have been encouraged to carry five subjects in place of the traditional four. The new organizational structure for group guidance does not infringe upon the time for academic study. It is believed that the radio broadcasts and the extensive use of community resource persons and staff members in the development of the broadcasts have helped to create a better understanding of the aims and purposes of the guidance program. The mechanical and organizational processes involved in the use of electronic aids in the instructional program have been refined. Finally, the value of the services performed by clerical assistants in the guidance suites has been well-established, and these clerical assistants have been retained.

There is reasonable assurance that there is an improvement in the utilization of staff time. Counselors do have more time for individual counseling. Two units which were part of the ninth-grade community civics program are now handled in the group guidance instruction, giving the community civics teachers more time to develop the remaining units. The clerical workers have relieved counselors and home-room teachers of

much clerical detail, and the involvement of more community and staff personnel in the total guidance program is an accepted principle in providing guidance services. The more important consideration of whether or not students are receiving the information and counsel they need to make intelligent educational and vocational plans, to select worth-while goals, and to develop wholesome attitudes, concepts, and values has been tested critically with what South Bend believes to be positive results. For the new insights that have been developed and for the changes which are expected to result in an improved program for our youth, South Bend wishes to express its gratitude to the Ford Foundation's Fund for the Advancement of Education and to the NASSP Commission which helped to make the experimental study possible.

The four high-school principals from South Bend, Indiana, use the school's FM station to tell more than 1500 eleventh-grade students what will be expected of them as seniors. They are, from left to right, Rupert T. Ferrell, Central High School; Russell Rothermel, John Adams High School; John H. McNamara, Washington High School; and John E. Byers, Riley High School.

Large-group instruction, the tape recorder, and team teaching are studied in Taylorville, Illinois.

CHAPTER XVI

Taylorville, Illinois, Senior High School Uses Tape Recorders, Team Teaching, and Large-Group Instruction To Improve Staff Utilization

CARL L. DILLON

WE AT the Taylorville Senior High School consider the past two years as having been extremely profitable. It would seem at first glance that the major force on our two-year study would be the development of the experimental approach of the staff, in regard to providing quality education for the youth of our community.

Participation in this study has been an inspiration to both teachers and students. We would consider the following factors as important outgrowths of this participation:

1. Team teaching and projects in teacher utilization bring greater rapport between and among teachers involved.
2. The students participated well, and seemed eager to make the project a success.
3. The study emphasized that large group teaching could be practical, and with the assistance of clerical help, partially solve some of the problems relating to teacher shortages.
4. The attitude of our students and teachers would lead us to believe that better teaching, and better prepared teachers have resulted with the team approach.
5. We have recognized problems in scheduling, but not to the point that it would be a deterring factor.
6. It is our intent to continue with the program, and to extend its implications in other areas.

Our professional staff members have outlined our participation in the study in terms of purposes and evaluation.

THE USE OF THE TAPE RECORDER IN OFFICE PRACTICE

The instructor of the Office Practice Class has been aware of the loss of pupil time and teacher effectiveness in the teaching of this particular class. This is a "many activities class" and requires that the teacher should

Carl L. Dillon, Principal, Taylorville Senior High School, Taylorville, Illinois, was assisted by the following staff members in preparing this report: Aldo Ceresa, Chairman of the Social Studies Department; Ada Songer, Chairman of the Business Education Department; Lowell Songer, Chairman of the English Department; Aileen Clawson, Bryon Chrisman, English Instructors; and Louise Pacotti, Latin Instructor.

have several areas of instruction going at the same time. It was felt that, by using the tape recorder, the many problems in the office practice room could be alleviated if the teacher had sufficient time for individual help, correction, and encouragement.

The problems presented by such a class differ somewhat from problems of other classes. In such a class, there is limited equipment. All the students are not doing the same thing at the same time. There are clerical and stenographic students in the same class. The instructor has felt that she was not doing justice to the amount of work she wished to accomplish and that she was not fully utilizing all the class time effectively.

In conducting this study, foremost in the mind of the teacher were these two points: (1) there should be no loss to the students; and (2) there should be better utilization of classroom time for the teacher.

Even though there are many advantages to the use of the tape recorder, one cannot overlook some of the problems involved in the effectiveness and advantages of tapes.

1. There are some commercial tapes available, but these are of a set pattern and lack the personality of the teacher. These do not allow time for student responses at the time the teacher wants them.
2. The tapes prepared by the instructor have some imperfections which become quite noticeable to the students. The script must be carefully prepared and edited.
3. The span of attention with a mechanical device is shorter than when the teacher is present dictating the material, or giving instruction. It is therefore necessary that, once the tape has been started, at frequent intervals the teacher monitor and participate in some activity making the students conscience of her presence.
4. The students like the tape recorder for a limited time, but claim they prefer having the teacher to do the instructing. It is more interesting and vital.
5. Instruction on the adding machines was not too effective because of the lack of demonstration which usually goes along with the instruction which is given by the teacher.

For the last year, the instructor has made wide use of the tape recorder as a means of instructing the students, thus making herself available for more individual attention. It was found to be impossible to have an experimental group and a control group in conducting this experiment. At first, the plans were to make a statistical study, but, after much planning, it was decided that this would be a status study.

The tape recorder was used for practice materials in dictation at varying speeds, shorthand materials paralleling the text, and instructions on the operation of the ten-key adding machine and the full-visible adding machine.

Conclusions

1. At first the students, not being accustomed to tape instruction, resented the fact that the teacher was not personally conducting the class at all times. This feeling was soon dispelled when the students found that actually they were

receiving more individual attention than would have been possible without the use of the tape recorder.

2. The tapes made by the teacher to meet the needs of her particular classes are more effective than the commercially prepared tapes.

3. Even though it may be more expensive, it is better to tape only on one side as it is much easier to edit by cutting and splicing, which would be impossible if both sides of the tape were used.

4. The classroom time is better utilized and the teacher can be more effective by using the tapes, but one cannot overlook the amount of time required in planning and taping.

Latin Staff Utilization Study

This is the final report of the study involving the use of the tape recorder, Califone machine, and various tests in the teaching of Latin. The study was begun the second semester of the 1958-59 school year with the use of the tape recorder in some of the Latin classes in an exploratory way; next, about the middle of the semester a Califone machine with a room speaker and eight headphones was purchased for the department along with some records. During this first semester's study as stated in the previous reports, experimental uses were made with these machines. At the beginning of the 1959-60 school year, the plan was to limit the study to the three Latin I classes, mostly ninth-grade students. It was planned to use the recorder and Califone machine more extensively in one section than in the other two in an effort to see if any difference in class achievement could be determined.

Before any Latin study was begun in any of the classes, the *Orleans Solomon Latin Prognosis Test* published by the World Book Company was given. Also each student's previous record was studied for the results of the SFA *Differential Aptitude Test*, and teacher's comments that had been recorded during the previous year. At the end of the first semester, Elementary Form Q of the *Cooperative Latin Test* published by Educational Testing Service was administered to all three sections. Again at the end of the second semester, the *Cooperative Test* was given, Elementary Form R. In April of last year, the *Otis Quick Scoring Mental Ability Test* and the *Iowa Silent Reading Test* were administered to all ninth-grade students in the school, and the results from these two tests were added to each student's record.

As often happens with plans, the above as stated did not work exactly as outlined. It had been hoped that some statistical results could be definitely presented, but the validity of such as were gathered does not seem to warrant their presentation. First the use of tapes and records in the one class for drill and study more extensively than in the other two did not prove feasible.

In tracing through each student's record for the year from the prognosis test through the two cooperative tests and the teacher's final marking and including the other test data available, it would seem that the use of the prognosis and cooperative tests has value. One year's use of the

prognosis test does not provide enough data to make it a criterion to be used in this school for determining who should or should not study Latin, but it does seem to offer enough information to make it valuable in connection with the other test data available at the beginning of the ninth grade in helping the teacher spot those students who may have difficulty in their study of Latin.

The use of the tapes and records will be continued in Latin I classes and also will be used in the other Latin classes in the future. Because of the organization of the material on the records, they may prove even better for review than for the introduction and study of the material in Latin I. The records do not have printed texts and were ordered by title. As a result, it was found that some records covered much more material than was presented at one time in the text and could be used to advantage only late in the first-year study.

Some teacher-prepared tapes on unit vocabulary reviews have been worked out well enough to be considered permanent in the tape library, but others on forms and pattern drills will need to be redone as their use showed weaknesses, particularly in the timing for responses. It has been the experience of the teacher that making good tapes requires much time and effort, but these tapes do have the advantage of being connected directly with the text used.

In general, the students have liked the use of the tapes and records, but care has to be taken not to overuse them. If used for too long a period of time, the students seem to lose interest, particularly the slower learners; in some cases the students showed a dislike of being pushed by the limited time given for the responses, though this pushing in moderation is probably good for them. In conclusion, it would seem that both the teacher and the classes feel the study was worth while even though statistical evidence of improved ability is not available. Continued use of the tapes, records, and tests will be made in the hopes of finding out more about their use and worth. While the tapes and records in the opinion of the teacher do not solve all of the problems of teaching Latin and of retaining the student's interest by any stretch of the imagination, still they have been and will continue to be an aid and help—judiciously used.

Brief Description of the Project

During the 1959-60 school year we continued our team-teacher experiment in sophomore English.[1] Two sophomore classes, meeting at the same period, were combined. The classroom was so designed as to allow the two classes to assemble as one group or to meet as two separate classes.

Grammar was taught the first semester and literature the second semester. Generally, the two classes met separately; but they were combined whenever the teacher-team felt that material could be presented as effectively in a combined group.

[1] NASSP Bulletin, Vol. 44, No. 252, January 1960, p. 268.

Purposes

Our purposes were to answer the question we had previously stated: Does the team-teacher approach (1) improve student achievement? (2) Influence student attitude? (3) Effectively utilize the staff?

To attempt to prove the first point, we set up the hypothesis that students will learn better in large groups than in smaller groups. To do this, we determined to use some nonparametric tests. They were: Forms 7 Y-3S and 8 Y-3S of the SRA *Iowa Tests of Educational Development*. After the tests were administered and the results compiled, we used the Mann-Whitney U Test, and were forced to reject our hypothesis on the 5 per cent level, and, therefore, accept the null-hypothesis that there was no appreciable difference shown.

To answer the second point, we used adapted parts of the SRA *Youth Inventory Poll* and themes structured to answer the following three questions: (1) What has been done differently in this class? (2) How has it helped you? (3) Have you enjoyed it more or less? In compiling the results from the above themes using the sign test, the following results were obtained:

End of First Semester	*End of Second Semester*
− 7	− 6
+ 13	+ 25
× 18	× 7

− Negative attitude toward the experimental class
+ Positive attitude toward the experimental class
× Indifferent toward the experimental class

The plus signs are in the direction of the hypothesis that the students adjust to the mode of classroom instruction. From the poll, there was not enough scientific data assembled to justify any conclusions.

In answer to the third question stated in our purposes, the teachers' logs indicate that one member received released time when the two classes met as a combined group. We were forced to accept the null-hypothesis here since the released time did not compensate for the additional planning, obstacles of grading, and records.

Conclusions

In spite of the findings indicated by the scientific data, the teachers felt that there was enough of value in the teacher-team experiment to warrant its continuation. In general, the student's achievement apparently was as great in the experimental group as in regular classes as indicated by scores on the *Iowa Test of Educational Development* given to sophomore classes.

The following barriers to success were noted in this experiment:

1. The inclusion of immature students within the group, who might have made more progress in smaller groups

2. Because of class size and regrouping, it is felt that there was not as much opportunity on the part of the teachers to know each student as well as in a regular sized class meeting for two semesters.

3. It was believed that the slow student felt insecure in the flexible grouping situation.

The following positive values were noted:

1. Added opportunities for use of specialized skills of each teacher-team member

2. Added impetus of two teachers in planning

3. Increased interest by the students toward alternated teacher presentations

4. Discipline problems were negative with the large group.

5. The better students became more self-reliant in the larger groupings.

Finally, it is recommended that the teacher-team approach can be used most successfully for employing audio-visual aids, introducing new units, and in regrouping students on ability and interest level without rescheduling of their programs. The success of such a program demands that time be allocated to the team for planning and meeting together.

English 12 and American Problems Large Group Experiment

Recognizing the fact that there is often much wasted effort and motion in presenting certain phases of any subject matter course in the conventional class of approximately thirty students when a teacher is teaching more than one section of the same course, two teachers conceived this experiment to try to determine whether or not the teaching of various phases of English 12 and American Problems could be done as effectively with a large group as was being done with a small group.

In order to carry out this experiment, sixty seniors were chosen at random with no attempt being made to group them in any way. This group became the experimental group for the purpose of the study. Because of the way they were scheduled, both the English 12 teachers and the American Problems teacher could meet the two groups separately in the regular 45-minute class periods. Wherever the class work would seem to make it feasible, each teacher could meet all sixty in one large room either in one 45-minute period or even have all of them for the double (90-minute) period of time. During the year, these sixty students met together 98 periods. Of these, 10 double periods were used for English 12 and the same number was used for American Problems.

Because there was only one other section of English 12, it was decided to use the thirty seniors enrolled in this section as the control group even though these students were not necessarily in the same section of American Problems since the latter is required of all seniors. Since the control group was the remaining seniors who elected to take English 12 and who were not in the experimental group, no attempt could be made in grouping.

A comparison of the IQ's of the experimental group and the control group revealed no appreciable difference between the two.

In order to have some standardized scores with which to measure progress of students and upon which to apply a statistical test, a pre-test was administered early in September to both groups. For this purpose, two sections from the *Iowa Tests of Educational Development* were used—"Reading and Interpretation of Literature" and "Background" and "Understanding of the Social Studies." These same tests were given to both groups in February after the students had completed the first semester's work in both courses.

An analysis of the standard scores on these tests shows the mean score for the experimental group on the "Reading and Interpretation of Literature" to be 17.3 on the pre-test and 18.8 on the post-test with a mean score of 18.9 on both tests for the control group. On the "Background and the Understanding of the Social Studies," the mean score for the experimental group was 22.4 on the pre-test, and 22.6 on the post-test, while the pre-test mean for the control group was 19.2 and the post-test mean was 20.1. Working with these mean scores and using the hypothesis that the experimental group would achieve more than the control group in the two areas, the instructors applied the Chi Square (X^2) test, and at the 5 per cent level of significance the hypothesis had to be rejected.

One of the other evaluating devices used in the project was a nine point *Likert-Type I.C.P. Rating Scale.* Students in the experimental group used this scale to indicate the intensity of their satisfaction or dissatisfaction with the large-group class sessions. Nine such ratings were obtained during the course of the experiment. Mean ratings for these are shown in Table I.

In order to determine what use a teacher would make of the time gained by being freed when classes were combined, a Teacher's Released Time Utilization Record was kept by the two teachers involved. Table II shows the utilization of this time made by the participating teachers.

Conclusions

1. Certain phases of teaching both English 12 and American Problems can be done as effectively with a large group as with a small group. Although the experimental group did not show a significantly greater gain in learning than the control group statistically, they did as well as the control group.

2. Students will develop a positive attitude toward the large group technique. An analysis of Table I indicates that although reactions were quite negative at the beginning of the experiment, steady progress was made toward a positive attitude with one noticeable exception. This exception was probably due to the type of work being presented at that particular time.

3. Released time for teachers resulting from large-group classes conserves teachers' time and energy with no detering effects upon the school program.

TABLE I—Composite Graph of Mean I.C.P. Ratings

Dates Administered:

I.C.P.—A—Sept. 21, 1959 I.C.P.—D—Nov. 20, 1959 I.C.P.—G—Mar. 25, 1960
I.C.P.—B—Sept. 22, 1959 I.C.P.—E—Feb. 22, 1960 I.C.P.—H—Apr. 20, 1960
I.C.P.—C—Sept. 30, 1959 I.C.P.—F—Mar. 4, 1960 I.C.P.—I—May 13, 1960

RATINGS	A	B	C	D	E	F	G	H	I
Very Satisfactory 9									
8									
Quite Satisfactory 7									
6									
So-So 5									
4									
Quite Dis-Satis. 3									
2									
Very Dis-Satis. 1									
	4.3	3.5	4.2	4.7	5.0	5.3	5.7	5.2	5.6

Limitations

1. It is difficult to determine beforehand what phases can be taught as effectively to a large group as to a small group. The participants found that introductions, explanations, testing, and other things could be effective. Discussion, however, was not very successful in the large group.

2. Student reaction, though anonymous, could be colored by what they think the teacher would like their reaction to be. This is the difficulty of the *Likert Scale* device.

TABLE II—Teachers' Released Time Utilization Record

Dates-Periods	*Time in Minutes*	*Lesson Planning*		*Outside Reading*		*Conferences & Make-up*		*Grading*		*Other School Responsibilities*		*Misc.*	
		Teacher A	Teacher B	Teacher A	Teacher B	Teacher A	Teacher B	Teacher A	Teacher B	Teacher A	Teacher B	Teacher A	Teacher B
9–21–59 / 9–30–59 8 periods	360	100	40	30	75	40	45	100	120	60		30	80
11–12–59 / 11–20–59 7 periods	315	120	45	60	45	45	30	60	80	—	25	30	90
2–22–60 / 3–4–60 10 periods	450	60	90	30	75	90	25	120	125	120	55	30	80
3–21–60 / 3–25–60 5 periods	225	30	25	60	40	45	30	60	45	30	45	—	40
4–11–60 / 5–3–60 14 periods	630	120	130	120	75	120	45	150	105	60	210	60	65
5–9–60 5–13–60 5 periods	225	90	90	30	25	45	—	30	45	—	45	30	20
Totals	2205	520	420	330	335	385	175	520	520	270	380	180	375
Percentage	100	24	19	15	15	17	8	24	24	12	17	8	17

3. The testing conditions for the post-test were quite different from those for the pre-test. When the latter was administered the students took only the two tests. When the post-test was administered, it was as part of the entire series of *Iowa Tests of Educational Development* and all seniors and sophomores were taking the test.

4. Physical limitations are sometime difficult to overcome. Although a room of sufficient size was available for the large group, accoustic and ventilation problems developed.

Recommendations

It is very highly recommended that seniors be scheduled in both English 12 and American Problems in such a way so as to make it possible to continue the practice of combining two groups when large-group teaching seems practical. Instead of having this for only one large group, it is recommended that schedules be arranged to make this possible with two more classes. Further study of this would help clarify when to use and when not to use the large-group approach.

CHAPTER XVII

University of Chicago Laboratory School, Chicago, Illinois, Evaluates Team Teaching

ROBERT HANVEY
MORTON S. TENENBERG

AS IN all research on human behavior in schools, the project staff faced the choice of reducing the project to a point where some degree of experimental rigor might be achieved or of plunging into the effort to work with the complex variables that gave a sense of worth to the participants. The lack of relevant theory in administration or education from which to develop a rigorous model of sufficient scope to account for or even define the important determining variables and the predilections of the staff led to a simple action-research design. As expected, the results were of the most value to the participants. We hope the insights and understandings gained by the staff and the descriptive information on procedures may be of help to others. At a non-demonstrable level, the project has wound up with a note of excitement. Some of the outlines of what the future may and can be have appeared and our direction of inquiry into the improvement of teaching and learning has been permanently altered.

TWO APPROACHES TO TEACHER TEAM ORGANIZATION

The 1958-59 experimentation and the 1959-60 project differed in approach and emphasis. The first year's work focused on the role of the *facilitator*, a teacher freed from regular classroom assignments in order to guide the effort of a teaching team to achieve flexibility in the manipulation of teaching-learning resources. The 1959-60 project, on the other hand, concentrated on *team composition*, exploring the operations of a team whose members were chosen for prior congruence of educational philosophy and practice.

THE 1958-59 PROJECT

The 1958-59 project, which involved freshman students and their teachers, was directed toward achieving and assessing the results of more flexible employment of educational resources. A group of 47 (of a total

Robert Hanvey and Morton S. Tenenberg are Staff Members of the University of Chicago Laboratory School, Chicago 37, Illinois.

class of 125) freshman students was assigned to a five-member teaching team. The team, chosen by administrative fiat, consisted of four subject matter teachers—one each for English, science, mathematics and social studies. The fifth member of the teaching team was the *facilitator*. This person had specialized functions in the areas of guidance, small-group instruction, arrangements for resources, team leadership, and liaison with administration.

With the exception of the facilitator, each team teacher carried a normal load of instructional and advisory duties in the school. Although the students involved also took courses in physical education and in the arts, these subjects were not included in the project itself. The 47 students were considered as one organizational unit within the freshman grade.

Flexibility was built into the program in two ways: (1) *large blocks of time were arranged during which all project students and several project teachers were available*, and (2) *the facilitator was available to work with small groups of students for instructional purposes*. Sessions up to three hours in length were made available to the teaching team for work with students during several days of the week. Within certain limits, the project team could (and it was expected, would) re-group project students, re-schedule classes for different times of the day, make up groups of widely varying sizes, and alter the length of the class periods.

Since the facilitator was relieved of fixed responsibility for a single subject area, he could presumably bring to the team a new kind of objectivity springing from an over-all concern for the *total* experiences of the students in the project. It was his responsibility to gather information about the needs of individual students, their reactions to various school experiences and activities, and to recommend changes in daily operation to other members of the team. The information was gathered by the facilitator in a variety of ways: direct observation of class sessions, interaction with students during small-group instruction, guidance and counseling sessions, paper-and-pencil questionnaires, parent-teacher conferences with parents of all project students, and meetings with groups of students chosen to represent their peers in informal "grape-vine" sessions.

The teaching team thus was in control of a greater number of variables impinging on students than is normally the case. It was the facilitator's role to direct the team's attention to the variables of teaching-learning situations potentially related to specific student-learning needs. He had the additional responsibility of making schedules for students and teacher based on the results of team discussion of such situations.

The fundamental question facing the 1958-59 team was whether it was feasible and advantageous for such a teacher group to organize flexibly the school day along lines suggested by specific educational tasks and objectives. Intrinsic to answering the question was the determination of factors which promote successful team operation.

Findings—1958-59

The amount and rate of learning is not significantly related to group size in instances where teacher presentation of material is involved.

Inaccurate perception on the part of students of what is expected of them may account for at least a portion of poor performance.

Flexible grouping meets with student resistance, especially on the part of students who are the least secure in their relationships with other students. Flexibility may only be possible if built on a firm base of at least one unchanging group with whom the student can achieve secure identification.

The morale and operational efficiency of the teacher team is related to the degree of congruence of educational values among the various teachers. The teachers in the 1958-59 project found little over-all agreement regarding major educational objectives. However, the facilitator was able to discover agreement on differing levels with each of the four subject-area teachers. Thus, within the larger team there actually were four sub-teams, each consisting of the facilitator and one subject teacher.

The team found the total job to be extremely demanding. This was particularly so because a built-in congruency of values did not exist and the team was in the difficult position of trying to develop such agreement while simultaneously involved in planning day-to-day operations.

The Freshman Team, 1959-60

The roots of the 1959-60 experimentation with teaching teams lie in the findings of the previous year's project. Preoccupation with the many possible roles of a "facilitator" gave way to concern for constructing a team which would be *in fact* a team. Specifically, team members were selected to exhibit relatively high congruence of educational interests and values.

Not too surprisingly, such criteria eventuated in congruence with regard to *other* characteristics of the teachers involved. As finally constituted, the 1959-60 freshman team involved three teachers of approximately the same age, all male, all with at least five years of experience in the school, all married with children. The teacher who had served as facilitator to the 1958-59 team served as chairman of the 1959-60 team, but, as the three teachers involved were social acquaintances as well as professional acquaintances, peer relationships largely obtained.

The team was both investigator and investigated. The teachers knew the basis for the composition of the team and were interested in exploring the potentialities of a collaborative group with high morale. The general professional accord that characterized the group was given focus and support through the choice of an intra-project endeavor that had high priority for all members of the team: *The discrimination and cultivation of "ideal inquiry" behavior on the part of the students.*

The major hypothesis of the 1959-60 team project was that teachers with like values and purposes would be more effective working in the formal collaboration of a team than would the same teachers working informally with the classroom autonomy and informal collaboration characteristic of typical school situations. There was, candidly, little hope that this

could be demonstrated statistically. But there was considerable confidence that the result would be gross enough to show up with reliability in the observations and judgments of teachers and administration.[1]

The Setting

A mathematics, a science, and a social studies teacher were designated an instructional team at the high-school freshman level; a group of 50 students arbitrarily chosen from the 62 freshmen who had registered for Math 1 (Algebra), Science 1 (Earth Science), and Social Studies 1 (Human Geography) were assigned to the team. Each of the three teachers believed that good learning methods will invariably lead a student to successful learning results. The improvement of student learning methods was adopted by the team as its primary goal.

Students were assigned to project classes for a total of 12 hours weekly—a three-hour block of continuous time two days of the week, a two-hour block of continuous time two days of the week, and two separate periods one-hour long on the remaining day. During this time, project students could be regrouped and class schedules for science, math, and social studies altered without affecting student or teacher schedules elsewhere in the school. All three team teachers were available for work with project students during all project hours.

Two of the three teachers carried a normal instructional and home-room guidance load for teachers at the school. The third teacher, who was appointed the team chairman by the school administration, had one class section less than normal for teachers at the school. It was his responsibility to provide a communication link between the administration and the team to see that the team carried on various administrative and research tasks. The chairman, however, had no prior decision-making powers; team decisions both on policy and specific practical operations were arrived at through team discussion and evolved agreement.

A secretary who performed a variety of clerical tasks was assigned to the team. Four rooms were available for the project during all project hours—one large classroom that could be quickly converted into two smaller classrooms by a sliding partition; another non-adjoining small

[1] Specifically the 1959-60 project rested upon the following line of thought:

Major hypothesis—the degree of significant accomplishment of educational goals is related to the degree of coordinated teacher effort.

Sub-hypothesis #1—The degree of teacher coordination is related to the degree of motivation for coordination.

Sub-hypothesis #2—The creation of a formal teacher team creates one motive for coordination—the general role expectation of team membership.

Sub-hypothesis #3—Additional motives for coordination of teacher effort are provided when team members share agreement about and level of interest in specific goals.

Sub-hypothesis #4—Congruence with regard to goals can be achieved by screening of team members (or by group identification of common goals in randomly selected teams).

classroom, and a science laboratory. The team met for a two-week planning session during the summer before the beginning of the school year; in addition, the three teachers were all free during the same period of the day for team meetings and were housed together in an office adjoining the large classroom. A member of the Department of Education of the University of Chicago was available to the team for consultative purposes.

The over-all plan for team work involved these steps: (a) the development of a model of "ideal" learning methods; (b) the classification of student learning behaviors to be used for grouping of students and the planning of learning situations designed to produce learning behavior change in the various groups.

Description of the Project Year

Two weeks of summer planning time set the stage. The tersest way of summing up the year would be to say that the team marched out on a plateau of high hopes, found some mountains where only hills had been expected, bogged down under the weight of practical responsibility to subject matter, drifted apart as perception of differences among themselves grew, then found solid ground and a common purpose once again, completing the year with high morale and increased professional maturity.

The first step in the team's chosen project (within the larger staff utilization project) involved the development of discriminatory criteria for classifying student inquiry behaviors. This was the hill that—viewed close at hand—turned out to be a mountain, an obstacle that the team eventually had to by-pass. Although the team finally reached a general agreement as to what constituted the ideal inquirer, a detailed description that could commonly apply to the three subject matter areas proved impossible to develop in the time available.

During the winter quarter, the team gave up the attempt to reach consensus on detailed criteria and turned to an intuitive judgment of inquiry behavior. Independent rankings of the project students were made with regard to their level of capacity for successful inquiry in each of the subject matter areas. These "blind" lists proved to match extremely well and formed the basis for a regrouping of students.

Three groups were established. The first consisted of seven students rated as very high by all three teachers. The plan for this student group was that it would work in one study area for a full week before proceeding in like fashion to the other subject areas. The group would meet one period each day with the teacher of the subject area being studied, would have work-study periods during all other project time, would have greater freedom to decide on methods of study and use of time, and would be expected to choose the particular phenomena to be studied. The teachers would aid in developing methods and avenues for study and would evaluate work done (in cooperation with the students). This group was called the Z group.

All students *not* in this small group were given an opportunity to choose between two other and different ways of working for the remainder of the year. In the *X* group teachers would provide a great deal of guidance and structure. There would be more actual written work in class, more "doing" homework and less "thinking" homework, more explanation by the teacher and more time spent discussing the purpose of various assignments and how to do them. The *Y* group would be a compromise in operation between the X and Z procedures. Students would be given guidance, but would be expected to exercise some degree of independence and autonomous inquiry.

As finally constituted, 25 students were in the *X* section, 18 students were in the *Y* section. Though the *X* and *Y* sections did not correspond exactly to teacher rankings with respect to anticipated success in inquiry, the team was convinced that the *X* and *Y* groups would exhibit easily discernable differences in response to learning expectations. This prediction was supported by the work of the students during the remainder of the year. (The X, Y, and Z groups were not formed until the end of March 1960, and thus operated only during the spring quarter.)[2]

Team Morale

As indicated above, the team began the year in high spirits. Several pressures operated to diminish at least temporarily this high morale. One factor that cannot be ignored is that there is such a thing as too much "togetherness." Students, too, with their inevitable need to differentiate among the adults with whom they deal, made the individuals of the team sensitive to differences in teaching practice that had not previously been perceived.

One student group, asked to assess the three teachers, noted that, "Teacher A had us search around the whole time looking for a solution and only gave us the answer the last day. Teacher B let us flounder for a week on a problem in deciding what to do next; then he offered suggestions and made sure that we went some place. With Teacher C, we kept right on doing what we had done in class except that the class was smaller and we could get more done."

The practical day-to-day demands of subject-matter teaching, of course, played a signficant part—as indeed did the lure of opportunity for independent teacher creativity—in promoting divergence of viewpoint within the team. When the going got rough with regard to team objectives, there was an understandable tendency to turn aside in search for more certain and easily obtained satisfactions provided by concentration on the subject matter area.

Yet, withal, the formal expectation of teacher collaboration implicit in the team organization served to pull the teachers back from such tem-

[2] A detailed description of the inquiry project is included in the *Final Report of the Staff Utilization Project* written by Morton S. Tenenberg, chairman of the freshman team for 1959-60. A copy of this report is available upon request from the Curriculum Coordinator, Laboratory School, University of Chicago, Chicago 37, Illinois.

porarily illicit adventures. The forced discussions of problems, coupled with the intellectual sophistication of the teachers involved, enabled the team to accept and adapt to the problems it encountered. Thus, with some discouragement but considerable realism, the teachers surrendered their original objective of formulating a detailed description of ideal inquiry behavior and settled for the perhaps less respectable but more achievable intuitive rankings.

Consequences and Conclusions

The consequences of the project for students were, at the least, not negative. The students were not deprived of any of the normal skills, information, concepts which might be normally expected from their work in the freshman year.

Once the *X*, *Y*, and Z groupings had been accomplished, student comfort was undoubtedly increased. Thus, any explicit or implicit expectations that students in the *X* group demonstrate independence of inquiry were removed. On the positive side, the small Z group provided its members with a rare opportunity for exploiting their capacity for independent work. In the total context of their school career, of course, this anomalous experience may serve to color the remainder of their school years a somewhat drab gray. On the other hand, the opportunity may also have been a burden that could not be tolerated in all classes and throughout the student's total school career.

What were the consequences for the team teachers themselves? The team situation inevitably created standards, tough standards, against which ideas and logic were measured. The teachers themselves felt one of the major results of the project to be the maturing of their own educational philosophies. The inquiry project developed a heightened awareness of the amorphous character of such concepts as "critical thinking" and "independent study." Team discussions promoted new sophistication regarding the dynamics of learning, a sophistication evident in the candor and caution which marked the team's own description of its work. Thus the chairman of the team wrote,

> The project team cannot say with any certainty that students' basic approaches to learning in school can be greatly changed once they have become solidified. The X, Y, and Z groups were in operation for only three months; the whole project for just one school year. There is no way of knowing what further modifications would have been possible if the project students had been exposed to team expectations and procedures for a considerably longer time. At most, the team can now say that student approaches, once formed, are difficult to change, but that some progress was made. A student's approach to learning in school would seem to be tightly bonded to his individual personality and way of life, and his inner image of his own self role in school; it can be expected that any one technique or any one method will benefit only a few students in a particular class.

The attitudes of the team teachers toward their own involvement in the team situation were ambivalent. At the end of the year, each teacher felt

that he had gained from the experience. But the teachers demonstrated no firm desire to *continue* participation in a team-teaching situation. On the other hand, there was no definite resistance to such an idea.

The attitudes of the three teachers obviously cannot be separated from the effect of the attitudes of other teachers in the school toward the team projects. In a school where few projects are underway, almost any project has status and ascribes status to those involved in it. In a laboratory school, where projects are the order of the day, high status comes to only a few of the endeavors. It does not come to those that strike at the prevailing culture of the school. Team teaching seemed, to many Laboratory School teachers, to cut at the very foundations of teacher creativity. In such a situation, membership on a team provided little guarantee of status within the faculty group. Although each of the three teachers had won high respect earlier for the worth of his ideas, team participation did not enhance this status.

Regardless of the ambivalence the teachers felt toward future participation on teams, each teacher indicated a continued desire to investigate the chosen intra-project endeavor involving student inquiry behavior. This testifies that the team as an organization was indeed a success.[3]

What administrative learnings have flowed from the team projects? It has become clear that a priority concern in the planning of teams must be for the informal social organization and processes of the team in operation.

Teams, of course, vary in (1) manner of and motive for creation, (2) the personal and professional characteristic of their members, (3) the overt and covert functions of the individuals and of the team, (4) the internal organization of the team.

A team may be created by administrative fiat or it may coalesce at the instigation of the teachers themselves. A team may have a strict hierarchial structure or it may be a peer group in which a set of teachers having essentially the same functions and reasonably equal status collaborate in their efforts. A team may be selected on the basis of *congruence* of chosen characteristics, or it may be a group of *chance* composition in which administrative expediency has played a major role.

In any event, that caution must be exercised in the formation of the team has become manifest. Teachers with many years of experience of classroom autonomy can be easily threatened by the rigid expectation of collaboration implicit in the team situation. Team members of radically different personalities and value systems have scant chance of cooperating toward the achievement of really shared objectives.

[3] A twenty-five minute sound film was made of a team discussion at the end of the 1959-60 year. In this film, titled *A Teaching Team Talks*, the three teachers sum up some of the highlights of the year's work. This film may be borrowed without charge for use by professional groups by writing to the Curriculum Coordinator, Laboratory School, University of Chicago, Chicago 37, Illinois.

When a group is created by external authority, then the selection of individuals for the group must either be based on probable compatibility or a rigid structure must be imposed until what begins as a formal team can have the time to become a *de facto* team. Even teachers with similar interests, background, and values need time, shared experiences, and establishment of a common vocabulary to become truly effective as a team. Until a group reaches this stage, there is probably value in having a considerable degree of structure and precise expectations imposed by administration.

With regard to the specific hypotheses that underlay the work of the 1959-60 project, this much may be said. It is difficult to show any increase in operational effectiveness with regard to student learnings. But it is most obvious to those who have observed the team that the year has been one of considerable growth for the teachers involved. Such growth must inevitably be translated into better teaching. The congruent value team may not produce quick, magical, and easily measurable gains in student test results. But, as an in-service training environment, it may well have few peers.

A bookkeeping class in Urbana, Illinois, is larger because of the use of a carefully selected teacher assistant.

Capable eighth-grade students in Urbana, Illinois, study algebra.

CHAPTER XVIII

University of Illinois High School, Urbana, Illinois, Experiments Further with Independent Study

David M. Jackson
W. L. Shoemaker
Paul Westmeyer

Five projects directed toward increasing students' responsibility for their own learning were begun in the University of Illinois High School in 1958-59 under the auspices of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. Three of the projects—those in the teaching of chemistry, advanced problems in science, and school-college articulation—were continued in 1959-60 with support from the Commission. Final reports for these projects are presented in this article. Two of the projects—those in the teaching of biology and of advanced French—were supported during 1959-60 by the Research Department of the office of the Superintendent of Public Instruction, State of Illinois. Briefs summaries of these studies are included here, and final reports have been published by the office of the Superintendent of Public Instruction.

Something of the common aim which has unified these studies may be seen in the title of the first year's progress report "A Search for Practical Means of Improving Instruction by Increasing Students' Responsibility for Their Own Learning. . . ." Practical results were achieved in full measure as the experimental courses and administrative procedures became a regular part of the University High-School program. Elements of each of the five projects are now included among the program elements which we recommend for serious consideration by other school faculties.

Even beyond the immediate practical impact of the studies has been the impetus which the staff utilization studies have given to further investigation and more widespread dissemination of ideas which have developed out of the studies. The work on the teaching of chemistry is being continued under the auspices of the Chemical Bond Approach Committee whose members seek to develop and try out a reconstructed high-school chemistry course.

David M. Jackson is Principal, W. L. Shoemaker is Director of Guidance, and Paul Westmeyer is Director of the Chemistry Project, University of Illinois High School, Urbana, Illinois.

The work in biology, with its emphasis on self-directed learning, is continuing in several ways, including motion picture production during 1960-61 under a contract with the United States Office of Education. The motion pictures will serve as a demonstration of the use of film technique in teacher education under Title VII of the National Defense Education Act. Growth in the pupil's ability to devise and perform biological experiments is to be shown in the films, which will be given wide distribution.

An Independent Study Course for Gifted Students in Science

Introduction

The problem of this investigation was described in the preliminary report (1959) in some detail. In brief summary, it was to develop and test a course which would enable gifted students in science to pursue advanced study in their chosen fields independently of formal instruction. The student who has completed basic science courses in the high school and who is capable and interested might either broaden his field of scientific knowledge or study more advanced materials in a standard field—biology, chemistry, or physics—in such a course.

Such a course was designed and established in the schedule of University High School for a two-year study (1958-1960). The course and the results of the study are described in this report.

Course Description

Advanced Problems in Science is offered to seniors who have taken the basic science courses. (In a few cases juniors have been admitted.) It is offered every hour of the school day and is available after school hours if necessary. The student desiring to enroll in A.P.S. makes application, on a form prepared for this purpose, preferably in the spring of his junior year. On his application, he must (1) state the problems or the field which he wants to study, (2) describe his grade record in high school, (3) state the method of scheduling he desires, (4) have a parent's signature to show that his plans are approved, and (5) present some evidence of his ability to work effectively without supervision.

Students are accepted or rejected on the basis of this information, data from the school records, recommendation from teachers, and a personal conference between the student and the supervisor of A.P.S. If he is accepted, the student may elect to work for one or one-half units of credit and his scheduled time must then be the equivalent of five or two and one-half hours per week. The credit given is the same as for an academic course; it is counted for graduation requirements and entered on his transcript.

The work done in this course is independent of instruction. The class does not meet with a teacher. Each student is assigned a desk and book shelves in a room which is used only for this class. Each student also is given a key to the room and the door is left locked when the room is unoccupied. This gives the students a place which they can truly call their own and where they can work undisturbed.

At the beginning of the year, each student has several conferences with the A.P.S. supervisor and with other teachers in the science department. Fairly detailed plans are drawn up for his study and a copy is placed in the student's file. It is then his responsibility to follow the plans and to ask for help when it is needed. (Plans may, of course, be changed in consultation with the supervisor of the course.) Laboratory space, equipment, and supplies are arranged for as needed.

Each student must keep two records and he is strongly encouraged to keep one more. He keeps a daily diary of his work, containing very brief description of what was done. He keeps a weekly reading record of articles and books which he has read outside the field of his own special study. And he is encouraged to keep a careful record of all that he does, both laboratory work and reference work, on his own study. In lieu of requiring that this record be turned in for grading, it is required that formal papers be presented at appropriate times during the year. These are published in a dittoed "A.P.S. Journal" and distributed to other students and teachers.

Bi-weekly seminars are held for the purpose of giving students an opportunity to discuss their work orally. Each student has a turn (or several) at giving a seminar discussion. This is done after school hours and lasts from 30 minutes to an hour. In addition to the paper and the seminar, students also have about three conferences (minimum) per year with the supervisor to enable him to follow the progress of their study. Grading is entirely an individual matter. No common subject matter is dealt with, so no tests are given which are common to the whole group. Students may, of course, elect to be tested in their own area, or the basis of grades may be papers, records, conferences, or project results. Student self-evaluation is also considered an important part of the course.

Evaluation Based on the Two-Year Trial

In answer to the question, "Does the course work?" descriptions were given in the preliminary report (1959) of the work of nine students. During the second year of the trial, four students were enrolled for one-half unit and eight for one unit of credit. Their studies were of comparable quality to those reported previously and are recorded in the course files. A consideration of these studies strongly suggests that this course ought to be of real value to the students. The real question of value, however, probably is related to effects upon college experiences of the students.

Students in the first-year trial of the course have been asked to say what effect they thought it has had upon their college experiences. (They, of course, have been in college only one year.) No one has made any adverse comments. All have felt that they have benefited from the course, and two have said that it was the most important part of their preparation for college.

Students have also been asked at the close of the year to express some evaluation of the course. While there have been many suggestions for improvements, the evaluations have always been positive. Students feel

that they not only are able to learn effectively what they have worked at by themselves, but also that they have a great deal of fun doing it.

Those parents who have volunteered comments have agreed that A.P.S. is a valuable course for their students. And the final evaluation may be seen in the popularity of this course. Many students begin even as freshmen to plan so that they may be accepted into A.P.S. as seniors.

Conclusions

1. The course has proved worth while as far as University High School is concerned. It will remain a regular offering in the science curriculum.

2. It has been found in this two-year trial that a minimum of supervision is necessary in this course. (Careful selection of students is necessary to retain this as a valid conclusion.)

3. Since most public schools have only a few gifted students, such a course would be a most desirable, and inexpensive, way to allow them to have special experiences in science.

4. A course such as this can be operated with few funds and with a minimum expenditure of teacher time. It would be highly desirable, of course, that the teacher have as much time to devote to a course such as this as that devoted to other science courses.

5. The success of such a course will depend upon careful selection and early guidance of students, and upon the willingness of the supervisor to trust the students once they have been admitted.

A Method of Teaching Chemistry in the Laboratory

Introduction

The enrollment of students in high-school chemistry courses has been increasing during the past few years. With larger numbers in classes, the supervision of students during laboratory work periods becomes more difficult. The result in many cases may be that the laboratory portion of the course is greatly reduced. This is a very serious matter since it is in the laboratory that motivation is typically highest, and it is also in the laboratory that the learning which is likely to have the greatest transfer value takes place.

The most desirable solution of this problem would be to provide more teachers, more classrooms, and more laboratories. Since there will be a considerable lag before this can occur, however, another solution must be sought. The solution proposed at the beginning of this two-year study was that a para-professional assistant might be used to help the regular teacher supervise the work of students in the laboratory. The first year of the study was devoted to developing materials and operating a high-school chemistry course with the help of such a laboratory assistant. The second year of the study has been devoted to the testing of hypotheses which evolved from the first year's study. The problem, re-stated, has been to develop and test a method by which the larger numbers of students in today's high-school chemistry classes can continue to have meaningful, varied, and extensive laboratory experiences.

Preliminary Data[1]

At the beginning of the first year of this study, the 30 students in the experimental class were given the *Max Test on Interpretation of Data* (1) and the *Whole Truth and Nothing but the Truth Test* (2) on factual information. Both of these tests were also administered as post-course measures. The *ACS-NSTA Cooperative Examination in High-School Chemistry* (3) was used only at the end of the course. Results on the two factual examinations supported the hypotheses that there would not be a significant difference between the learning of students in the experimental course and that of comparable students in other courses and that a significant amount of factual learning would occur during the course. Results on the *Max Test* showed a non-significant (at the .05 level) trend toward increased ability to interpret data among students in the experimental course.

In order to test the original hypothesis (stated above in the Introduction), an assistant was employed to work with the instructor in supervising the laboratory. The laboratory work was planned in such a way that the students were given progressively more responsibility for planning and carrying out their own work. At the beginning of the course the work was carefully directed and closely supervised. After the first two months, the method of planning laboratory work was changed to one in which small groups of students wrote directions and helped supervise the rest of the class in carrying them out. (All students had several opportunities to be on such planning committees.) During the last two months of the course, the work was individual, consisting of qualitative analysis and individual projects. Each student was almost entirely responsible for planning and carrying out his own work.

With the help of the assistant, a complete diarial record of the course was kept. From this record and from the results of two scheduled interviews with students during the year, data were selected for ten case studies. It became evident during the course that there was much variation among the students on the effectiveness and efficiency of self-direction. At the end of the course, the instructor and assistant rated all students on self-direction. The five students rated highest and the five lowest were selected as subjects for the case studies.

The Major Hypothesis

It was demonstrated during the first year of this study that a large class can be effectively supervised in the chemistry laboratory by a teacher and a part-time assistant. But a better solution to the original problem seemed to emerge from the data. Since most students in the course were able to demonstrate a considerable degree of self-directive ability by the end of the year, it seemed reasonable to predict that some degree of self-direction might be expected of students from the beginning of a course. It was hypothesized that, by appropriate methods at the beginning of a

[1] For a more detailed description of the first year's study, see the 1959 Preliminary Report, pp. 296-300 NASSP BULLETIN, Vol. 44, January 1960.

course, students could be quickly trained to bear a large share of the planning and carrying out of their own laboratory work. If this were found to be true, the problem of supervising a large class in the laboratory would be greatly reduced. This hypothesis was tested during the second year of this study.

Method of Testing This Hypothesis

Laboratory procedures were so designed that, on the *first* experiment, students were required to locate reference material in order to complete the work assigned. For the *second* experiment, very limited directions were given and students were made responsible for planning procedures (or asking for help in planning if they felt it was needed). From the third experiment on, all that was given to students was a statement of the problem to be solved. Planning and carrying out the experiment was left to students. (Safety precautions were given as necessary, new techniques were demonstrated, and other help was given when it was requested.) Students were encouraged to ask questions of a theoretical nature, but procedural questions usually were answered by referral to a reference book.

During each laboratory session, a record was kept of the number of procedural questions and the number of theoretical questions asked by students. These data are presented in the next section.

Data for First Five Experiments

The following tables are based on records kept in the laboratory during the first five experiments (September 6–November 10):

While the total number of procedural questions asked by students decreased steadily (this is seen most clearly in the "per-day" column, since some experiments required more time than others), the number of theoretical questions remained about the same. It was apparent by the end of the fifth experiment that students were locating needed information for themselves rather than asking for it. It was also apparent that most students were much more personally concerned with their laboratory work than is usually the case.

TABLE I—Nature of Experiments

No.	*Title*	*Description*
1	Description of a Chemical	Given a chemical, describe it in as much detail as you can. Heating, chemical tests, *etc.*, are encouraged.
2	Density	Determine the density of an unknown chemical.
3	Compound formation	Dissolve iron in various acids. Determine what compounds are formed.
4	Polarity	By solubility, determine the electrical polarity of substances supplied.
5	Thermal stability	How readily will heat decompose given substances? What products result?

TABLE II—Number of Procedural Questions Asked by Students

Experiment	*Total Questions*	*Questions Per Day*
1	49	25.5
2	32	16
3	37	9.25
4	33	8.25
5	15	7.5

Summary and Conclusions

It was found during the first year of this study that students could apparently be given a large share of the responsibility for planning and carrying out laboratory activities by the end of the course. Testing of the hypothesis that this responsibility could be given students almost from the *beginning* of the course was done during the second year. The results given above, together with the evidence of high factual achievement during the course, suggest that students can be led quickly to plan and direct their own work in the laboratory and that such self-direction can be quite effective.

Increased Responsibility for Seniors

In essence, the study of increased responsibility for seniors as a means of easing the transition from high school to college provided (1) procedures by which seniors were made responsible for managing their own time outside of regularly scheduled classes, and (2) a follow-up of the class of 1959 through their freshman year in college.

The procedures and the results as observed in the school were discussed in previous reports. The rules originally proposed by the students and accepted by the faculty have remained in force without modification, and the practice of assigning no senior to a study hall unless there are specific problems of achievement or behavior has become an accepted part of the school routine. The study has had the welcome practical result of making a significant reduction in the amount of teacher time devoted to study hall supervision.

Results of the Follow-up Study. During the summer of 1960, a questionnaire was sent to all members of the graduating classes of 1958 and 1959 who entered college. The following paragraph was incorporated in the questionnaire that was sent to the members of the Class of 1959:

> Previous senior classes in University High School were assigned to study halls or to other teacher-supervised activities when not in class. Yours was the first class in which individual students were expected to manage their own time outside of class. We are anxious to know whether, in your opinion, this plan for student self-management helped or hindered your work during your freshman year in college. Will you please indicate your feeling on this matter, citing specific examples if possible?

A similar questionnaire was sent to the members of the class of 1958 explaining the plan that had been put into operation and asking whether,

in their opinion, "such a plan for student self-management in high school would have helped or hindered your work during your freshman year in college?" In analyzing and tabulating the responses to the free-response question, the following categories were set up: 5–Favorable toward plan with evidence cited; 4–Favorable toward plan with no evidence cited, 3–Neutral; 2–Against plan with no evidence cited; and 1–Against plan with evidence cited. The results by classes are shown in Table III.

Colleges and universities attended by the class of 1958 were Boston, Chicago, Cornell, Illinois, Oberlin, Smith, and Swarthmore. Colleges and universities attended by the class of 1959 were Cornell, DePauw, Eastern Illinois, Franklin, Harvard, Illinois, Knox, Lawrence, Northwestern, Oberlin, Reed, Rice, Swarthmore, Trinity, Wellesley, and Wisconsin.

Typical responses from the class of 1958, which did not have the self-management plan, that fell in categories 2, 3, and 4 respectively, were:

2–I definitely do think that this is not a good idea. I believe it may have hindered my freshman year work if this program had been in effect when I was at University High.

3–Wouldn't have necessarily done one or the other.

4–This is a fine program, I feel. By the time you're a senior; you have your study habits formed and it is to your advantage to have this free time to budget for yourself.

Typical responses from the class of 1959, which had the self-management plan, that fell in categories 3, 4, and 5 respectively, were:

3–Student self-management neither helped nor hindered my work.

4–I feel that the plan helped me.

5–If I compare my work to the work of most freshmen at (name of College) who had had a background of many rules and regulations in a boarding school, I may safely say that the plan has been advantageous to me. Generally speaking, I found that those students who had been accustomed to strict controls imposed by administrative authority could not adjust to the uncontrolled, unguided college life. Even some of my classmates who expressed a desire and interest in better studying habits were not able to schedule their time satisfactorily, for they had never before been required to guide and push themselves independently, and many of them reacted to their new-found freedom with an uncontrolled joy and irresponsibility.

Conclusions

1. There was no significant difference between the two classes in college freshman grade-point average or in number of hours which they reported as spent in studying; hence this evidence does not indicate that the plan was either beneficial or detrimental from these viewpoints.

2. Since no negative opinions were expressed–48 per cent were neutral and 52 per cent were in favor of the plan–it is concluded that the plan was a success from the participants' viewpoint.

3. A significant reduction was made in the amount of teacher time devoted to study hall supervision.

4. The plan was judged by the faculty to be successful and the plan is being continued.

TABLE III—Questionnaire Responses

	Class of 1958	*Class of 1959*
1. Number attending college	23	36
2. Percentage of response	57	75
3. Responses by categories		
Category 5	0	9
Category 4	4	5
Category 3	8	13
Category 2	1	0
Category 1	0	0
TOTAL	13	27
4. Number of hours outside of class reported as spent on study	26	27
5. Freshman grade-point average (on a 5-point scale)	4.13	4.06

FRENCH

Can students in fourth-year French classes learn as much from two classes per week with the teacher plus three class hours of independent study as they can in the conventional five classes per week with the teacher? Evidently they can, for fourth-year students of Miss Pauline Changnon in 1958-59 and 1959-60 did as well as previous classes had. During the two experimental years, students used books and phonograph records, as well as twenty specially prepared tapes, during their periods of independent study. The subject matter of the twenty taped includes drama, short stories, poetry, criticism, nonfiction articles, descriptions of life in France, and historical and political material. The thirty voices are those of both men and women of varying ages representing all major regions of France.

We are so pleased with the results of this experiment, particularly in seeing the extent to which students can learn to work independently, that we have made the course, including two classes and three periods of individual laboratory work per week, a regular part of the foreign language program. Although the students who participated in this experiment were almost all of high intelligence, ranking, in most cases, above the 90th percentile on the *Differential Aptitude Test* of the Illinois Statewide Testing Program, we do not hesitate to recommend such an advanced course for use in public schools, as the pupils enrolled in third- and fourth-year foreign language courses are usually a selected population of better than average ability. As noted in the summary below, students' attitudes are crucial, and high intelligence and verbal ability would not, in themselves, guarantee success in a program in which independent study is necessary.

A detailed report, which describes the results of the two years of experimentation and presents Miss Changnon's materials and procedures in detail, is available from the office of the Superintendent of Public Instruc-

tion, Springfield, Illinois. The report is entitled, "Techniques in Learning to Hear, Understand, and Use a Foreign Language in High School."

In summarizing the skills needed to support a fourth-year course which requires much independent study, Miss Changnon lists in her report the following requirements for the students:

1. Considerable oral-aural work, some of it with records and tapes
2. Ability to take notes in French and transcribe French dictation.
3. Strong foundation in French grammar
4. An extensive French vocabulary and well-developed dictionary skills
5. Resourcefulness in problem solving
6. Willingness to cooperate with the group and to discipline himself when necessary
7. Attitudes of self-reliance, so that he can bridge the gap created by the absence of a teacher to whom he may turn each time he has minor difficulties.

Biology

Major effort in the biology project was devoted to developing materials to be used by students to help them learn to work on their own in the laboratory, freeing the teacher to help on those problems which demand specialized knowledge and competence. An important practical value sought in this study was that of helping teachers maintain, in the face of rapidly rising enrollments, laboratory programs which encourage students to experience the psychological rewards of discovery through genuine scientific experimentation.

Two years turned out to be a very short time in which to develop the needed materials. The basic notion of locating and collecting information for student use in rearing, breeding, and experimenting with living organisms was found to be a very useful notion, but the task of locating this information in the tremendous variety of possible sources and the task of preparing the information for student use so that it did not raise more questions in students' minds than it answered turned out to be formidable. Nonetheless, a signficant number of techniques and devices were located and sufficient experience was gained with this approach to establish its feasibility.

A report of this study tentatively titled, *Manual for Self-Directed Experimentation in Biology* is being published by the office of the Superintendent of Public Instruction, Springfield, Illinois. This report will include the following parts:

1. A description of the staff utilization study
2. An annotated bibliography for use by students and teachers on how to plan and conduct experiments
3. Illustrative techniques and devices and examples of student projects
4. A guide to statistics commonly used in biological sciences, with particular reference to those techniques which can be used by high-school students.

CHAPTER XIX

Urbana, Illinois, Senior High School Changes Staff Patterns and Provides for Superior Students

R. H. Braun

Why Staff Utilization Projects?

THE average high-school teacher faces the staggering task of teaching five classes each day five days a week. The students might well range in ability from IQ's of 80 to IQ's in excess of 140. Most teachers will have a number of preparations. Clearly, steps must be taken to make this teacher's task less overwhelming and to lighten his burden by every means at our disposal.

When the Urbana High School faculty decided to undertake a number of projects to effect better staff utilization, there was only one major consideration. A faculty's primary task is to educate young people. Since very little can be done in limiting the number of young people to be taught, the most productive area for improving education consists of limiting the non-teaching tasks which the faculty member must perform and improving his efficiency in teaching by enlightened procedures.

Since the Urbana High School serves a university community, we have approximately twice as many superior students as the average community. We also have many students who are average and below average in ability so that the problem of providing for all of them is very acute. In this respect, however, I am sure that our problem is not much different from that of other communities.

In summary, we undertook projects in staff utilization to provide for a diverse school population, to stimulate our superior students, to make teachers more efficient by freeing them from clerical duties, and, in general, to create better teaching and learning situations.

Surprisingly enough, our projects in better utilization of staff were enthusiastically supported by many staff members and accepted as worthwhile experiments by all the others. The Urbana Board of Education and C. C. Loew (then-superintendent) approved the projects wholeheartedly and some of our projects in accelerating classes were most favorably received by parents. I don't recall any objection being voiced by a parent or pupil, but undoubtedly there were a few.

R. H. Braun is Principal of Urbana High School, 1002 South Rose Street, Urbana, Illinois.

Use of Para-Professionals

We have made some use of para-professionals, primarily in commercial subjects. A teacher's aide was used in general business and bookkeeping with classes of 50 or more students taught by one teacher. The teacher's aide checked attendance, helped grade papers, and in general served as a secretary for the teacher. We felt that the better students learned extremely well in this situation, but that the weaker students were more diffident and less likely to ask for help. At the end of a year's trial, we decided that the advantages of teachers' aides in the area of general business and bookkeeping probably did not outweigh the disadvantages.

The use of a teacher's aide in typing and shorthand has been much more advantageous. The results of the two years of experiment indicate that equal or superior pupil learning may be achieved in double-pupil load classes in typewriting. This conclusion is based mostly on pupil accomplishment in speed and accuracy and does not weigh so heavily such factors as student-teacher relationships, classroom response, student attitude, *etc.* The teacher found that she was able to increase the amount of required student work since she had the assistance of the teacher's aide in grading papers, recording, *etc.* This was reflected in slightly superior student accomplishment in terms of speed and accuracy.

	Comparison of Mean Speed and Accuracy of Beginning Typewriting Students of Urbana High School during 1957–58 (non-experimental), 1958–59, and 1959–60					*Comparison of Mean Speed and Accuracy of Advanced Typewriting Students of Urbana High School during 1957–58 (non-experimental), 1958–59, and 1959–60*				
	First Semester Only					*First Semester Only*				
Year	*No. of Students*	*Mean Speed*	*Mode Speed*	*Mean Accuracy*	*Mode Accuracy*	*No. of Students*	*Mean Speed*	*Mode Speed*	*Mean Accuracy*	*Mode Accuracy*
1957–58	57	31.22	33,30,25	6.77	5	47	43.98	45	4.29	3
1958–59	134	36.14	35	6.05	5	35	44.22	46	5.14	2
1959–60	134	33.68	33	5.70	4	46	46.2	58.43	3.1	3.1

Based on five minute writings

In shorthand, the combination of large classes, a certificated teacher, and a teacher's aide did not prove so effective as in typewriting. In 1958-59, the strict functional method of teaching Gregg shorthand was followed. Students spent approximately the first five weeks learning shorthand theory solely by reading and rereading shorthand outlines and watching the instructor write outlines on the board. Because of the large number of students, each student was not able to recite as often as is desirable under this method. Soon it was obvious that some of the students were not doing the necessary amount of daily work.

In 1959 the methodology was changed to include both reading and writing during the beginning learning period. Daily written and oral assignments were made from the first day on and thus the temptation on the part of some students to neglect the daily work was greatly decreased. This method was found to be especially advantageous for a large class and gave the instructor a much better means of determining the students' daily progress. A comparison of beginning shorthand classes during the non-experimental year of 1957-58 and the experimental years of 1958-59 and 1959-60 are given below.

Beginning Shorthand—New Matter Dictation with 95% or Better Accuracy
One Full Year

Speed	*1957-58*	*1958-59*	*1959-60*
5 minutes at 60 words a minute	80% of class	76.4% of class	89.1% of class
3 minutes at 80 words a minute	60% of class	38.2% of class	59.3% of class
5 minutes at 80 words a minute	60% of class	35.3% of class	54.1% of class
5 minutes at 90 words a minute	40% of class	17.6% of class	11.1% of class
3 minutes at 100 words a minute	20% of class	11.7% of class	11.1% of class
5 minutes at 100 words a minute	10% of class	8.8% of class	10.0% of class
3 minutes at 120 words a minute	5% of class	2.9% of class	2.4% of class
5 minutes at 120 words a minute	5% of class	2.9% of class	2.4% of class

Providing for Superior Students

Our projects which freed superior students from the lockstep movement of the masses of students were probably the most successful of any experiments which we have conducted in recent years. I say successful in terms of improved accomplishment of the students involved and the subjective reactions of students, parents, and faculty.

For the past two years, the Urbana Junior High School, under the guidance of the principal, Dr. Wendell Anderson, and the Urbana High School have cooperated on a project of acceleration or changed placement. This project might well be termed a project in better utilization of pupil time as well as staff time. Approximately 80 superior eighth-grade pupils each year have been permitted to take one, two, or three ninth-grade courses. The courses offered to them were algebra, ninth-grade English, and ninth-grade science. Upon completion of the courses, the pupils received high-school credit in the subjects taken and were able to enter high school with from one to three units of high-school work. We discovered that these eighth-grade students did just as well in algebra and general science as high-school freshmen. Our tests indicated they did not do quite so well in English as high-school freshmen, but we are confident that, when these people have completed the freshman year, they will be much further along in all of the subjects than if they had followed the usual pattern. We are testing this hypothesis.

In the spring of 1959, we conducted a survey of the attitudes of the students and parents involved in this program and found them to be overwhelmingly favorable. Many of the students and parents were genuinely enthusiastic. It is important to point out here that very few students and parents were interested in early graduation; they preferred that these students receive a more comprehensive education in high school. Of the 80 students involved, 92 per cent planned to attend high school for four years.

A similar survey was conducted of the same students and parents a year later, in the spring of 1960, to determine attitudes after these students had been enrolled in the Urbana High School for a year. Again the reaction of parents and students was overwhelmingly favorable. Advantages of the program listed by parents and students were (1) superior students have the opportunity to take more courses in high school, (2) they are challenged, (3) they work closer to capacity, (4) they have greater interest in subject matter.

Adverse comments were procedures for selecting students for the program might be improved and some suggested that we should improve our marking system, have less homework, and make better selection of teachers.

Experimentation in French

In many colleges, two years of a foreign language in high school are considered the equal of one year of a foreign language in college. Feeling that the students don't suddenly acquire the ability to accomplish twice as much in a foreign language when they enroll in college, we decided to experiment with superior foreign language students to see if they could do two years of work in one year in high school. Eight seniors, six juniors, one sophomore, and four freshmen were enrolled in a beginning French class designed to do two years of French in one year. This class was taught by Mrs. Francoise Stravinsky, to whom French is a native language. Achievement was measured partially by tests recommended and approved by the French department of the University of Illinois and compared with University standards for incoming students.

Students were selected on the basis of IQ, achievement tests, and school record in closely allied subjects. They were told that they would receive credit in excess of one year only if they clearly demonstrated by tests and other specified performances a higher standard of achievement. One of the tests used was the *Cooperative French Test, Elementary Form R,* published by the Cooperative Test Division, Princeton, New Jersey. The basic textbook used was a first-year college text, *Foundation Course in French* by Fraser, Squair, and Parker. A complementary text, *Basic French Reader* by Harris and Leveque, was also used.

On the *Cooperative French Test,* the mean score for fourth-semester students is 59.8 with a standard deviation of 9.7. Twelve of the nineteen students scored above the mean. Only three were more than one standard deviation below the mean. According to the standards used by the French department of the University of Illinois, all of these students would be

given credit for two years of high-school French when they enrolled in the University of Illinois.

Mrs. Stravinsky felt that the students in the experimental class acquired a much better pronunciation than the students in two other classes that she taught. Their reading was good although she was not able to devote the time to reading that she desired. Comparatively little time was left for conversation. We are hopeful that the installation and use of a language laboratory in 1960-61 will overcome some of the shortcomings. This class is being continued in 1960-61 but we have scaled down our objective somewhat. We are striving to do three years of French in two years rather than two years in one.

Provision for High-School Seniors to Take University Courses

Logically, if a school encourages superior students to take subjects one year earlier than usual, some provision undoubtedly must be made for them to take subjects traditionally reserved for college. This is especially true if most of the students prefer to attend high school for four years and do not wish to be graduated in less time. The Urbana High School has provided some advanced placement courses in trigonometry, college algebra, analytic geometry, and chemistry.

Providing numerous college courses in a high school is difficult, however, for highly trained teachers are scarce and the small enrollments in these courses make them exceedingly expensive. An excellent, partial solution to this problem involved the cooperation of the University of Illinois. As reported in the January 1960 Bulletin of the NASSP, the University of Illinois, in September 1959, announced special provisions for admitting selected, talented secondary-school seniors. By September 1960, eight students from the Urbana High School had enrolled, or completed courses, in the University of Illinois. Of the twelve courses taken by these people, eleven A marks and 1 B mark were received.

Team Teaching in English

One project in improved staff utilization this year will make use of team teaching in junior and senior English. We feel there are two weaknesses in our English program: (1) not enough of our seniors take courses in American literature, and (2) not enough writing is done. Briefly, the project for team teaching consists of this: one teacher who is particularly strong in grammar and composition will teach these subjects to three senior classes three days a week and the same subjects to two junior classes two days a week. Another teacher, who is particularly strong in literature, will teach American literature two days a week to the senior classes and English literature three days a week to the junior English classes. In this way we hope to make use of the outstanding abilities of two teachers. Also, English is such a complex subject that it is difficult for any one teacher to prepare detailed lessons in all facets of it.

In every English class use will be made of theme readers as described below.

For many years, English teachers have found themselves in an untenable position. They are faced with a staggering amount of material and many, many decisions in abridging it. In recent years, critics have protested vehemently that not enough writing is done in English classes. Undoubtedly this is true, but what is the solution? A teacher with 100 pupils who assigns one theme a week will find that she must devote 1,200 minutes a week to grade these themes, at 12 minutes per theme. This amounts to 20 hours of theme grading a week in addition to the 25 hours of teaching and the hours used in preparing for these classes. If the English teacher has 150 pupils, which is probably the usual class load, she will have to devote 30 hours a week to theme grading. This is obviously an impossibility.

In the 1960-61 school year each English teacher in the Urbana High School has the services of a theme reader who reads three of every four themes assigned by the English teacher. The English teacher reads and grades each fourth theme. The theme reader receives 35 cents for each theme graded and rechecked after the student has corrected the theme. If 32 themes are assigned to each pupil during the year, the total cost per student will be $8.40. This is nominal compared with the cost of one student in an English class, and the teacher is freed of the extremely burdensome, enervating, and impossible task of grading 100 to 150 themes a week.

This project was tried on a trial basis for four months in two freshman and two sophomore English classes during the 1959-60 school year. Well-qualified, competent theme readers were found to be available in considerable numbers. In many instances, these theme readers were at least as well qualified to grade themes as were the regular teachers. Theirs was a specific task. They did not need to possess engaging personalities or have the ability to maintain a learning situation in the classroom. Their task was to grade themes and return these to the teacher who in turn would approve them and pass them back to the student.

The results of this trial project were weighed somewhat subjectively. Each student's first theme and last theme were compared. In the short space of four months, it was difficult to establish conclusively that there was substantial improvement, but it was felt that our experience and that of other schools were such that the decision was made to procure the assistance of a theme reader for each English teacher. We anticipate that the cost for 800 English students will be $6,400, or approximately the cost of one English teacher.

Innovations in Mathematics

During the past three years, Dr. Mildred Brannon, a teacher of mathematics in the Urbana High School, has been achieving unusually good results with selected, superior students who possess considerable ability

in mathematics and are strongly motivated. Ten to fifteen students a year for the past three years have studied plane geometry, advanced algebra, college algebra, trigonometry, analytic geometry, calculus, and various ramifications of so-called modern mathematics on an individual basis. These strongly motivated students have been permitted to progress as rapidly as they are capable of doing. Most of these students have completed two years of mathematics in one year and one boy has completed three years of mathematics in one year.

A Last Word

We don't pretend that these experiments are momentous or even that they represent a determined stride toward the school of the future. These are experiments, perhaps more practical than scholarly, which a public high school might initiate. Community enthusiasm, a quickened interest on the part of students and faculty, and an improved educational program are some of the dividends to be realized. An appreciation of our high opinion of the value of our projects in better utilization of staff can be shown by the fact that we are conducting more experiments in this, our third year, than ever before. Our program has not been a comprehensive one, but we have the feeling that we are on the verge of some very fundamental, far-reaching changes in our educational program.

The expressions of the students in United States history indicate their interest in a point the teacher is attempting to make in response to a question. The aides and second teacher are in the room to give assistance if necessary in the San Diego, California, city school.

CHAPTER XX

Utah Schools Conduct Variety of Studies Under State-wide Organization

MATTHEW F. NOALL

THREE years of educational experimental research in the state of Utah, 1957-60, directed toward solving some of the most critical school problems, have produced gratifying accomplishments. The results have brought educational leaders to the threshold of a new era in administrative theory and practice. The strides forward are the result of the sponsorship by the National Commission on the Study of the Utilization of Staff in the Secondary School and a financial grant from the Fund for the Advancement of Education.

The publication by the National Commission of *New Horizons for Secondary-School Teachers, Images of the Future,* and *New Directions to Quality Education,* mark mile posts along the path to improve quality education. Educational terminology such as the Trump Plan, team teaching, large and small group instruction, the ungraded classroom, TV instruction, paraprofessional helpers, video and magnetic tape lessons, understood by few teachers in 1956 are today common talk in educational discussions. Knowledge of the new electronic and mechanical aids to instruction is today essential in teacher preparation.

Research studies in Utah on a statewide approach have been conducted in various school districts as directed by the Utah Central Research Committee. The organization and work of this committee was discussed in the NASSP BULLETIN for January 1958. Eight studies pinpointed toward the solution of pressing educational needs have been promoted during the experimental period, 1957-60. Each study has furnished positive data toward improved educational techniques and better pupil learning. The purposes and findings of each study have been summarized in issues of the BULLETIN of the NASSP for 1958, 1959, and 1960. This article recapitulates some information previously presented with additional implications of the projects for the improvement of general education.

THE PHYSICS FILM PROJECT

The Utah Physics Film Project, conducted during the year 1957-58, was a utilization study designed to test the effectiveness of teaching a complete

Matthew F. Noall is Executive Secretary of the Research Committee of the Utah Secondary-School Principals' Association, 305 Third Avenue, Salt Lake City, Utah.

course in high-school physics with a set of *Encyclopoedia Britannica* physics films known as the *Harvey White Films.* Some of the problems considered were:

1. What were the possibilities of saving teacher time through large-group instruction?
2. What savings could legitimately be made in the investment of physics equipment through the greater use of audio-visual instruction?
3. Could this type of instruction provide greater opportunity for individualized direction of pupils?
4. Through this instruction could the standardized level of education be maintained or improved and at the same time effect greater economy of administration?

Schools of various sizes were chosen for the study: three large schools with well-trained teachers and adequate facilities; three medium-sized schools where physics had been taught, but where teachers lacked formal training in physics and where equipment was meager; and four small schools where physics had not been previously taught, where teachers were not formally trained in the area of physics, and where there was very little physics equipment. These schools, designed as experimental, used the *Harvey White Physics Films.*

An equal number of schools, using similar criteria, were named as control schools. Students in these schools were taught according to usual methods. They did not see the films. They took the same pre- and post-tests that the experimental students took.

The research design was based upon a battery of tests given before and after the experiment to both the control and experimental schools. The basic criteria for the study were expressed "gain" scores. A student's gain score in physics was the difference between his initial test score and his final test score.

Many variable factors inherent in the organization of the schools were beyond complete control. However, the decision was made to sacrifice control for gains to be derived from observing the use of the films in a classroom situation.

Comparison of achievement within sub-groups—large schools, medium-sized schools, and small schools—showed signficant differences in achievement gains only for the medium-sized schools, where students taught by regular instructional methods made more improvement than did those taught by films.

From a study of matched groups the following tentative conclusions were drawn:

1. Physics can be taught successfully by film. Achievement gains are probably determined more by student ability, instructor competence, and school culture than they are by the nature of the instructional program.
2. Regardless of instructor competence and adequacy of laboratory, any school could profitably use a selection of the films.
3. Schools with untrained physics instructors and inadequate laboratory equipment would benefit from using a large majority of the *Harvey White*

Physics Films as the basic point of departure for their physics course. However, faculties using film instruction should be cognizant of the same need for sound instructional procedure with the films as that which exists in regard to "regular" pedagogical methods.

4. The use of audio-visual aids in the classroom permits a greater utilization of teacher time.

a. Large pupil groups consisting of two or more classroom sections may be instructed by the use of audio-visual aids with the same degree of efficiency as a small group.

b. Teachers may be released from some of the classroom responsibility for special service with pupils or for preparation because of large-group instruction.

c. As a result of large-group instruction, teachers involved in the program may be relieved of certain classroom duties and thus find time to devote to special work with or for pupils.

5. Films can bring into the classroom experiences and demonstration materials that would not otherwise be available. This could be of great economic saving to the school system.

The physics experiment has had important influence upon educational practices in both the state and nation. In teachers' meetings, administrators' conferences, and national workshops, the findings have been analyzed. Where applicable the positive results are being utilized in school procedure, particularly in such areas as science. A post-experiment survey of the secondary schools of the state revealed that a large majority of the schools desired to make extensive use of audio-visual aids for improved instruction. The survey likewise revealed the fact that teachers felt that a film lesson each day, as used in the experiment, was far too many for best results. Teachers prefer to make a selection of desirable films, variable in number, to suit the needs of each class and teacher.

The use of large-group instruction for a greater utilization of teacher and pupil time and economical use of equipment has been generally recognized.

Core Curriculum Project

During the school years, 1957-58 and 1958-59, the Weber County School District sponsored a study in four junior high schools to investigate the implications of core curriculum as a means of effectively utilizing teachers' time.

The first year of the study was one of in-service training and orientation of teachers. In order to evaluate capably the difference in how teachers utilized their time in a traditional classroom situation as compared with a core curriculum program, it was necessary to make sure that the teaching staff had been thoroughly trained and that the staff fully realized the concepts of core-teaching. Resource units which combined subject matter areas of language arts and social studies were developed during the initial year of the study. To establish norms which could serve as bases of evaluation achievement tests, sociometric measurements, problem checklist measurements, and actual stop-watch measurements of the ways in

which teachers were spending their time were taken in the traditional classroom. The same measurements were taken later in classes where the core curriculum was established. The major hypothesis of the study was stated as follows:

> The time of teachers whose language art and social studies classes are organized in a core pattern, and whose total time is scheduled for a planned sharing of materials, resources, and responsibilities among several teachers, will be better utilized than will the time of those teachers whose programs are organized in the conventional manner, with separate subjects independently scheduled.

In addition to the test measurements listed above, the research design called for a detailed scoring of actual classroom teaching based upon a classroom observational technique as described in *An Exploratory Measurement of Individualities of Schools and Classrooms* (developed by Cornell, Lindvall, and Saupe).[1] The observations were performed by principals specially trained for the work.

The research data developed in the experiment indicated that there were significant differences between core and non-core class operations. The differences of both direction and magnitude support the hypotheses of the experiment. The validity of the major hypothesis was proved in the majority of cases where it was tested under the sub-hypotheses. Those who worked closely with the program and who have had years of experience in secondary-school classrooms as teachers and administrators agreed that both the research findings and impressions gained from actual observation of teaching indicated that the time of teachers was more advantageously utilized under the core program than it was in non-core teaching circumstances.

The results of the experiment have spread to many schools and localities. In speaking of the influence of the study upon Weber County Schools the superintendent says:[2]

> The three junior high schools of the Weber School District now have a stabilized, effectively operating core program utilizing techniques and resources developed through the NASSP utilization of teacher time study under the auspices of the Ford Foundation.
>
> Teaching in this program is very popular with a waiting list of teachers on file in the district's teacher personnel office. Principals and counselors report that seventh-grade students adjust to departmentalized instruction more readily as they move from elementary to secondary school. This program has definitely bridged the gap in this regard and has thus solved a problem of long standing.
>
> Teachers meet often to compare results and share ideas. This practice, initiated during the two pilot years, has done much to provide a means of more effective utilization of results of planning and development on a district-wide basis.

---

[1] Francis G. Cornell, Carl M. Lindvall, and Joe L. Saupe, *An Exploratory Measurement of Individualities of Schools and Classrooms*, University of Illinois Bulletin, Volume 50, Number 75; June 1953, Urbana, Illinois.

[2] Letter from T. H. Bell, Superintendent of Weber County Schools, July 1960.

The core project in the Weber School District has resulted in changes in teaching practice that now appear to be a permanent part of the district's educational program. It took two years of supported action research effort to accomplish this. It is especially important to emphasize that the results appear to be lasting in their impact upon the district's high schools with no apparent pressure to resort back to traditional teaching practice.

The Junior High School Evaluative Criteria

The *Junior High School Evaluative Criteria*, published in 1960 by the Utah State Department of Public Instruction, is the culmination of six years of study of which the last three were conducted as a utilization project sponsored by the National Commission on the Study of the Utilization of Staff. The inception of the research came as a result of a need felt by the Utah Secondary-School Principals' Association. Special committees working in close cooperation with the State Superintendent of Public Instruction developed tentative criteria which have been revised, tested, and validated through trial use in four junior high schools. Special training classes for workers on the project were conducted by the three institutions of higher learning in the state. After completion of the work, the Utah State Board of Education accepted the document as a guide to (1) define the characteristics of an efficient junior high school; (2) establish effective ways and means of evaluating junior high schools; and (3) provide a means by which responsible agencies can stimulate and assist junior high schools to continuous growth.

The work in developing the *Criteria* and the research design of the experimental procedure was presented in The Bulletin of the NASSP for January 1958. Since that report the project has been revised; it has also been subjected to additional validation techniques.

Fundamental similarities exist in the needs of junior high-school pupils everywhere. It is also true that certain basic principles may be established as criteria for the evaluation of any junior high school. However, the point of view expressed in the volume is that evaluation must be based upon the major objectives attempted by each school and that it must be in keeping with the broad behavioral changes in pupils toward which these objectives are directed.

The educational philosophy expressed in the volume enables the guide to be used in any school where perhaps exceptional and trying conditions exist. This forward-looking aspect is an outstanding asset of the document.

The guide points out that a more efficient utilization program based upon a more complete use of teacher competencies, educational materials, and school facilities should characterize the junior high school of the future. New and varied teaching procedures should replace much of the lecture-recitation type of learning. New and more challenging types of audio-visual aids should become standard equipment. Teachers should be prepared to put into effective use such instructional realia as tape recordings, slide-sound stories, open and closed-circuit television programs, video tapes, mock-ups, exhibits, charts, maps, and graphs. Stu-

dents should have opportunities to work in small groups and on individual projects. Of necessity, this procedure must rest upon the flexible approach to classroom study.

Classroom responsibilities of the future will probably be divided among teacher specialists, general teachers, instructional assistants, and staff aids. This method should lead to a more complete use of individual competencies among both pupils and teachers. The program should then be limited only by the time and facilities available to the subject.

In the junior high school of the future, all pupils should not be expected to acquire the same general level of achievement, which, under the old plan, was too often set at dead level. Under proper guidance, pupils capable of accelerated work should be aware of their potential and should assume greater responsibility for their own education. Flexibility of grouping, together with more freedom in scheduling instructions, should provide not only the necessary stimulus and opportunity for accelerated pupils, but also an equal stimulus for the increased development of average and retarded pupils.

An efficient program of pupil analysis based upon sociograms and tests of various types can provide guidance personnel with information designed to increase the tendency toward the maximum development of all pupils who are willing to participate in the recommended programs.

The volume contains, in addition to a manual of directions, twenty-two sections classified according to subject areas, special services, and general appraisals. Each section is published separately in pamphlet form. This is for the convenience of teachers who may be interested primarily in the evaluation of their own subject area and the manual of procedure. Thus, a school which undertakes a complete evaluation may supply each teacher with the section in which he is most vitally interested.

The research director of the State Department of Public Instruction conducted an extensive study in three pilot schools to determine the effects of the evaluative experience upon (1) the morale of each principal and teacher; (2) the improvement of teaching techniques; and (3) the over-all effect of the evaluation procedures on the school.

A coding system of identification was used so that those handling the data have never known which individuals supplied particular responses. But, by the use of the code numbers, it has been possible to note individual changes in response during the study from fall to spring. Perhaps the major value of this effort has been to provide an external, unbiased check on the whole evaluative study, with special emphasis on its effects upon teachers and its possible utilization values. Identical questionnaires and interview responses were used in each school.[3]

In terms of constructive realism about what an evaluation program can be and should be, it would seem that considerable gain has been made. At the end of the study, estimates were fairly certain as to which were the

[3] Tabulation of the research data may be found in the complete report.

valuable and which were the non-productive evaluative activities. Many of the teachers and principals involved in the experiment have said they now entertain a more analytical attitude toward their work and the whole program. They seem determined, insofar as their own efforts are concerned, to continue the evaluation program, looking forward to future gains as based on this year's work.

The final revision of the document was made after the detailed study of its use in the pilot schools. Weaknesses and practices of questionable values were revised.

Principals were able to supply a number of statements of changes in the school program, schedule, and facilities, as planned upon the results of this study. The types of anticipated changes related to "teacher utilization" are:

1. Cutting teacher assignments to a minimum
2. Increasing the length of some classes
3. Limiting the student activity program
4. Making greater use of teachers in cooperative planning
5. Developing new ways of providing for gifted students
6. Adding new classes for less academic students
7. Reducing class load
8. Reassigning certain teachers to keep them within their fields of specialization
9. Centralizing certain teaching activities under one person
10. Adding counseling and administrative services

The *Junior High School Evaluative Criteria* is presented to the junior high schools of the State of Utah by the Utah Secondary-School Principals' Association with the expectation that it will be a potent force and guide for the upgrading of junior high schools and a blessing for the boys and girls who are the schools' special care. It is the hope of those who have put their finest efforts toward the completion of the document that its influence will help to ve the entire nation.

Better Staff Utilization in Hurricane High School through Language Arts Reorganization *

The Hurricane High-School Project, begun in August, 1958, is designed to improve the Language Arts Program in grades ten, eleven, and twelve of the Hurricane High School, through:

1. Better use of teacher time and talent
2. Ungraded English classes in which students are grouped homogeneously according to ability and skill
3. Flexible schedules making it possible for language arts classes to be combined or broken into smaller units as seems desirable for different activities
4. Improved instructional procedures and techniques

* This section on the Hurricane Project was written by Gwyn R. Clark, a Consultant on this Project and Professor of Education in the College of Southern Utah, Cedar City, Utah, and by Matthew F. Noall.

During the past two years the project has actively involved four language arts teachers, the principal of Hurricane High School, the assistant superintendent of the Washington County School District, a consultant from the College of Southern Utah, and 180 students enrolled in the tenth to twelfth grades at Hurricane High School.

Procedure

The project aims to improve language arts by grouping students more homogeneously so that instruction can be better geared to students' interests and abilities. The following formula has been used to rank students at Hurricane High School:

$$\frac{\text{IQ}}{10} + \text{Scaled Score on } \textit{Cooperative English Test} + \text{Last Year's Final Grade in Language Arts} = \text{Final Score}$$

A = 10; B = 8; C = 6; D = 4; F = 0

Last year the 18 students with the lowest scores were assigned to Language Arts, Group I; the 18 with next lowest scores were assigned to Group II; the next 35 to Group III. The remaining 105 students were allowed to choose among Language Arts IV, emphasizing grammar, composition, and usage; Language Arts V, emphasizing business communication; and Language Arts VI, emphasizing speech. In every language arts group there were students from each grade level.

The project provides for flexible grouping. In 1959-60, two language arts classes were scheduled the first period, two the fourth period, and two the sixth period. On occasions when it seemed advantageous, the two language arts classes scheduled the same period could be combined for lectures or movies. Furthermore, two teachers teaching language arts classes the same period had consultation periods together so they could plan such activities.

The project aims to improve the language arts program by making better use of teacher time and talent. Each of the four teachers involved in the project has an area in which he seems to feel most competent. The program is planned so that he can spend most of his time teaching in that area.

Finally, a rotation system has been worked out so that each teacher can use a number of the units he has prepared with several groups. This rotation plan saves teacher time in preparation.

Language Arts Groups I and II have rotated only between two teachers. Following is their schedule for 1959-60:

First Half Year (August 31, 1959–January 22, 1960)

Group I	Teacher A	Unit–*Animals*. Emphasis on composition, usage, reading, phonics, spelling, and penmanship.
Group II	Teacher B	Unit–*Understanding People*. Emphasis on literature, and composition.

Second Half Year (January 25, 1960–May 27, 1960)

Group I	Teacher B	Unit–*Understanding People*. Emphasis on literature, and composition.
Group II	Teacher A	Unit–*Animals*. Emphasis on composition, usage, reading, phonics, spelling, and penmanship.

The rotation made it necessary for Teacher A to prepare only one unit which she presented in turn to both Language Arts, Groups I and II. Likewise, Teacher B prepared only one unit which he presented in turn to Language Arts, Groups I and II.

In 1959-60, Language Arts, Groups III, IV, V, and VI had a nine-week block with their first teacher, three six-week blocks with other teachers, and returned to their first teacher for a final nine-week block. During the six-week intervals each teacher prepared one unit which he presented in turn to three different groups.

The project aims to impove the language arts program by stimulating better instructional procedures and techniques. Improving English instruction has been an important part of each of the six workshops held thus far. The project has required teachers to work out unit plans well in advance and submit these in writing; this kind of careful preparation has resulted in better teaching. Seventy-three professional books, pamphlets, and magazines have been added to the Hurricane library during the past two years. These publications, widely read and used by the teachers involved in this project, have kept them in touch with recent developments in language arts and have stimulated growth and experimentation.

As the project has progressed, the staff has endeavored to concentrate on phases of language arts in which students were weak. In the spring of 1959, for example, Hurricane High-School students seemed particularly weak in the "Effectiveness of Expression" section of the *Cooperative English Test*. Consequently, during 1959-60, the consultant gave all the students in the project four specific topics to write on at various times during the year. She analyzed these compositions to determine where students most needed help and returned the compositions to their teachers with appropriate suggestions. The teacher followed through with students, giving instruction, drills, and appropriate help to correct the difficulties indicated. In 1960-61 developmental reading is being stressed.

Tests, Evaluations, and Reactions to Project

Form Y of the *Cooperative English Test* was given to all students at the beginning of the experimental program. A different form has been given at the end of each year since to determine growth. *Cooperative English Tests* have also been given to high-school students in St. George, who though not scientifically paired, have served as a control group.

Scaled scores on the *Cooperative English Test* show that students in the Hurricane High-School experimental project have grown more rapidly than the students in the St. George High School. For example, when students who had been in the schools for the past two years and had taken all the tests were considered, the average total English scaled score on Form Y of the test, given in September 1958 before the project started, was 44.87 in Hurricane and 47.11 in St. George. In other words, the average score in St. George High School at the beginning of the experiment was 2.24 higher than the average score in Hurricane High School.

On Form Z of the test, given to the same students in May 1959 after the first year of the project, the average scaled score was 48.82 in Hurricane High School and 50.5 in St. George High School; at that time the average score in St. George was only 1.23 higher than in Hurricane. On Form T of the test, given to the same students in May 1960 after two years of the project, the average scaled score was 52.16 in Hurricane and 52.28 in St. George. The St. George students had a higher average by .12, but the Hurricane students had shown considerably more growth.

Attitudinal questionnaires show parents, teachers, and pupils preponderantly in favor of the program at the end of two-year experimentation. Principal Washburn summarized the benefits of the two-year experimental program as follows:

1. An improved utilization of teacher time has been demonstrated where the teacher has prepared a specialized unit of instruction which represented the greatest individual competency and where the unit was taught to two, or more, class sections.

2. Workshops have resulted in marked improvement in lesson planning and teaching.

3. The consultant service has aided immensely in improving instructional practices.

4. Financial assistance through the Fund for the Advancement of Education has provided a quantity of professional publications which are contributing to improved educational techniques throughout the country.

5. Records show that students have done more library reading than ever before, probably as a result of unit teaching.

6. The project has provided a wedge by which the established traditional way of teaching could be altered.

Changes Projected for 1960-61

In 1960-61 all Hurricane High-School students have been grouped in language arts sections according to their ability, at least insofar as the formula reflects or predicts ability. Heretofore, this has not been true. The first year, 1958-59, only the 36 students with the lowest scores were actually placed in separate groups. The second year, 1959-60, the sixty-one students whose scores were lowest were placed in special groups. Other students could choose their sections.

In 1960-61, because of the addition of one more teacher in Hurricane High School, there are seven instead of six language arts groups. This makes it possible to reduce the size of the classes. Heretofore, there have been more than 40 students in some sections; this year classes will range from 15 to 34.

Also, during 1960-61, five language arts groups, III to VII, are being taught during the fifth period by five different teachers. Each of the five teachers prepares one unit and teach it in turn to each of the five different groups. This arrangement will encourage even greater utilization of teacher time and talent.

The changes for 1960-61 indicate a gradual move toward greater homogeneity in grouping and a more systematic and comprehensive rotation of language arts groups among the various language arts teachers involved in the project.

Use of Paraprofessional Personnel in a Language Arts Program in the Senior High School *

An experimental study in the use of paraprofessional assistants in improving a language arts program to permit a more effective utilization of language arts teachers in the eleventh and twelfth grades was undertaken by the Logan High School during the school year 1958-59. Experimental and control classes were organized. The number of pupils in the experimental group was increased to 40 pupils, while in the control groups each section retained the former registration of 26 or 27 pupils. Teachers of the large experimental groups were given the assistance of teacher helpers. Such grouping saved in time at least two-fifths of a teacher per day, or ten periods per week.

Both control and experimental groups were given the same series of tests for the purpose of determining the achievement differences between the two groups. Evaluation consisted of subjective appraisal of pupils and teachers as well as statistical test data. From the data collected in the experiment it was concluded:

The use of paraprofessional personnel in a language arts program has possibilities for a school district faced with problems of increasing enrollments and limited physical facilities. Objective evidence to prove the values of assistants for teachers of English classes with enrollments of forty or more students is not provided in this experimental study. Subjective evidence, however, leads one to conclude that, in spite of numerous administrative and personnel problems involved, paraprofessional assistants can be used effectively and economically in language arts teaching. They can make possible a more effective use of time and competencies of the professional teacher.

As described in an earlier article,[4] the Logan Senior High School initiated an experiment during the 1958-59 school year with the desire of improving its language arts program. Both faculty and administration had expressed dissatisfaction with the quality of student performance in the areas of language arts as revealed by standardized tests. In addition, the school district was and is faced with the problems of increasing enrollments and limited physical facilities, as well as limited financial resources. It was hoped the employment of paraprofessional helpers would so assist the regular English teacher as to effect an improved teaching program and aid in the alleviation of these administrative problems.

* This section on Paraprofessional Personnel was written by Parry Wilson, Principal of Logan High School, Logan, Utah, and by Matthew F. Noall.

[4] The Bulletin *of the National Association of Secondary-School Principals*, Vol. 44, January 1960, p. 172.

Four paraprofessional assistants were employed on a part-time basis, being reimbursed on an hourly rate, and being assigned to four regularly employed teachers in the English department to assist in classes with enrollments of forty or more students. The paraprofessionals corrected test papers and themes, did routine clerical tasks, provided remedial instruction for those in need of special help and seminar-type assistance for the academically talented, conducted class periods during which movies, filmstrips, and recordings were in use, and functioned in a variety of similar ways.

There was little objective evidence or statistical data assembled in this experiment to prove that the English class of forty or more students taught by a professional teacher and a paraprofessional assistant achieved more than the "normal" English class of 27-30 students taught by the professional teacher alone. Likewise, there were some objections raised by the students, the professional teacher, and even the assistant to this means of providing instruction. However, there was sufficient subjective evidence accumulated to lead one to conclude that, in spite of numerous administrative and personnel problems involved, paraprofessional assistants can be used effectively in language arts teaching.

As a result of the conclusions drawn from this experimental study which terminated in May 1959, all of the English teachers, including those who had not been involved in the study, requested paraprofessional assistants during the 1959-60 school year. With the approval of the Board of Education, six assistants were employed—each being assigned to a regular teacher. The school was fortunate in employing six college graduates, each of whom had a major or minor in English, but was not available for a full-time position because of home responsibilities. The assistants spent from 6 to 10 hours per week working under the direction of the regular teacher and carrying out those duties mutually agreed upon.

The duties of the helpers during the past year were very similar to those assigned during the experimental study. However, the administration was of the opinion that the original experience added much to the orientation and preparation period with the new assistants before they were initiated into the program. The regular teacher and the assistant agreed in advance on policies, such as theme correction and grading procedures. Regular periodic conferences between the teacher and the helper were held. In fact, the regular teacher made the choice in the selection of the assistant assigned him. As a result, it was our belief that the teacher was far more willing to share and even to relinquish responsibilities inside and outside the classroom to the assistant than had been the case with the teachers involved during the previous year.

Financially, the aggregate time devoted to the language arts program by the paraprofessionals was approximately equivalent to that of one half-time teacher. The savings to the district approximated $2,000.

Probably the greatest benefit we have experienced from the use of paraprofessionals has been in the improved morale of our language arts

teachers. Their preference would be fewer students in each class, but, under existing circumstances, it is not possible to reduce loads in this manner. They have regarded the employment of helpers as a sincere effort to lighten their loads, to enable them to require more written work, to spend more time in lesson preparation, to hold more individual and small-group conferences, to select materials, and to evaluate their teaching procedures.

These teachers agree that a program of paraprofessional helpers in the language arts area has a potential for improved utilization of the time of the professional teacher. It is the belief of the administration that the use of paraprofessionals has contributed to an improved language arts program.

The Wahlquist Teacher Team Project*

Team teaching at the Wahlquist Junior High School in Weber County during the past two years has developed a wholehearted support of this method of classroom instruction. Such teaching is not only being continued in the school where practiced, but, because of the demonstrable gains in learning, this type of organization is being practiced during 1960-61 in all the junior high schools of the district. Administrators, principals, and teachers were prepared, through lectures, demonstrations and workshops, to introduce the new techniques into their schools in September 1960.

The first teaching team was introduced at the Wahlquist Junior High School in September 1958. It was extended in scope in 1959 and was introduced on a district-wide basis in September 1960. The first year of the experiment was devoted largely to developing the specific techniques of team teaching. During the second experimental year, in addition to improving the specific techniques of the project, "An Integrated Course of Study in United States History and Language Arts" was developed. These teaching units, which have been furnished to other junior high schools of the state, form a major contribution to the success of the experiment with the teaching team.

The basic hypothesis for the second-year experiment was stated as follows: "The organization of language arts and social studies teachers into teams responsible jointly for large groups of students and the organization of such students into large and small groups for specified learning activities will result in an efficient use of both teacher and student time."

The research design has been based upon a series of tests given at the beginning and the end of the experimental year. The same measurements were given to the control schools. Comparison of the two sets of experimental data justifies conclusions in support of the hypothesis as stated above under the conditions existing at the Wahlquist Junior High School.

* This section on the Teacher Team Project was written by Sidney L. Wyatt, Principal of Wahlquist Junior High School, Weber County, Utah, and by Matthew F. Noall.

The subjective evaluations of the teachers and administrators participating in the project also furnish additional evidence of the validity of the hypothesis.

The teachers at the Wahlquist Junior High School set, as one goal for the school year 1959-60, the development of units of work which could be used by teams of teachers in any of our junior high schools. They felt that, while studying United States history, they could also be studying oral and written composition, the rules of grammar, the use of words, music, and art as well as literature related to the period in history under consideration. They also felt that the study of language arts could well be enriched by using the unit of history being studied as a source of enrichment material. There is a vast storehouse of stories, poems, plays, and music which will add to the interest of both history and language arts if they are presented together.

The teachers also found from experience that some lessons, if properly prepared and adequately enriched with visual and audio aids, could be taught in large groups to better advantage than in the regular size class. This method of teaching encouraged a higher level of teacher competency. During the first experimental year, the eighth-grade students were scheduled so that approximately one hundred and ten, or half of the class, came together in a two-period block of time. The other half of the class was scheduled for the two periods following. This permitted the teachers to meet with the large group of one hundred and ten pupils for a full period each day. They then divided the pupils into three regular sized classes for the following period. As a rule, American history—with its enrichment of stories, songs, and poems—would be emphasized in the large group, while composition, grammar, and word study would be stressed in the smaller groups. This same class organization is scheduled again during this school year. In our team of teachers, we usually found that the abilities, backgrounds, and interests of one of the members was more intense than that of the other team members in teaching a particular lesson or part of a lesson. The selected teacher would take over the combined classes and teach them in a large group, while the remaining team members used the time for consultation with individuals or small groups or in preparation for the time when each would teach the large or combined group. The class schedule provided a daily planning period in which it was possible for the team to meet and make plans for future lessons.

We have learned that the success of this method of teaching in our school, depends, among other things, upon the following conditions:

1. Members of the teaching team must have a major or a minor in both English and social studies. They must all be willing to work harder than is ordinarily required of teachers and to support each other in the team.

2. Special physical facilities are advisable, such as a room large enough to seat the large group comfortably and a good workshop in which to develop teaching aids.

3. Special teaching equipment should be available, such as overhead projector, record player, recorder, opaque projectors, ozalid, dry mount press, filmstrip and movie projector, and flannelboard.

4. A Visual Aids Club composed of students and directed by the teachers is highly desirable. Our club met after school hours and prepared overlays, murals, maps, flannelboard materials, and charts.

5. Units of study which include the entire course should be available. This work must be fairly well accomplished before the plan is adopted. The units should include a daily outline for the large group and one for the small group for each lesson. Prepared units tend to give the teachers confidence in their work. Equipment for use in the classroom should be ready, such as projectors, library references, filmstrips, charts, tests, overlays, transparencies, flannelboard, and supplementary materials. A bibliography for each unit is also essential. As a help to the teacher in presenting the prepared units, a supplement in loose leaf form which contains stories, skits, poems, and essays was made available.

6. Individual files were kept by the students in a cabinet provided in the class-sized group room. Compositions, word study lists, maps, tests, and other materials were deposited in the file. The students had ready access to such materials. They were used for student-teacher conferences, parent-teacher conferences, and student self-evaluation.

A major result of teaching from these units was the assurance that the subjects of United States history and eighth-grade language were well taught. The outline provided for the systematic and thorough teaching of the course of study as outlined by the State Department of Public Instruction, as well as that of the school district.

Each integrated unit, which included objectives, suggested methods, and bibliography, was organized first on a weekly basis. A brief outline of the work to be covered in both the large and small groups in United States history and language arts was included.

The second part of the unit organization consisted of the daily lesson plan. A lesson objective for the large group and another one for the small group for each day of the course was indicated. This was followed by a list of procedures for developing the objectives outlined. Also included in the units of study were copies of materials to be used. These included: word study lists, literature to be memorized, outlines, maps, charts, tests, and a list of materials and equipment to be used with the lesson.

School officials now feel, after two years of experience, that the teaching-team organization has been successful. The teachers in the team are enthusiastically committed to this system. Parents have been brought in close contact with the work and almost all of them are in favor of it. Students prefer it to other methods. Accelerated academic progress of the pupils was clearly indicated. The testing program conducted or supervised by the state project director substantiates the above statements.

A high degree of outside interest has been shown in the experiment within our district, in other districts in the state, and in several neighboring states. District directors of secondary education, principals of other junior high schools, and members of three teams of teachers visited our

workshop which was held during the summer of 1960 to revise and edit our units of work for publication.

The teaching team approach and the integration of subject matter in the two areas mentioned seem to be an accepted part of our educational program in the Weber School District.

An Audio-Visual Project to Disseminate Vocational Information to Junior High-School Pupils*

A research project to develop specific guidance materials for use in junior high schools was undertaken in January 1959 in response to a generally felt need throughout the state of Utah. The scope of the study was limited to the level of ninth-grade pupils. Two educational requirements were coordinated: *first*, that part of the state guidance program allocated to the ninth grade, and *second*, an overview of basic occupational information. The two aspects have been brought together in a series of narrated scripts illustrated by 35mm color-transparencies. These scripts consist of twenty-four lessons in vocational guidance and occupational information.

The series is organized under the following categories: agriculture, business, communications, art and entertainment, government service, homemaking, manufacturing, mining, professional service, transportation, and construction. Added to the series are two introductory lessons coordinating the present need for pupils to understand the meaning of the *World of Work*. Basic guidance principles were used to develop an interest in the future choice of a vocation. The articulated series of picture stories was especially developed to acquaint junior high-school pupils with the beginning ideas of the above fields of work. Each narration has been recorded on magnetic tape, and the 35mm pictures which accompany the tape recording add multi-sensory impressions as amplifying material for the spoken word.

Each story is complete within itself and can be used by any faculty member who feels the picture story might enhance and stimulate pupils in a particular subject.

Too many pupils are prone to drop out of school at some time from the ninth to twelfth grades and, consequently, do not have the opportunity to learn about the *World of Work* as part of their educational experience. It is hoped that this project will stimulate pupils to complete high school and even to continue beyond the secondary level.

Production problems were more difficult than originally anticipated. Only the first half of the outlined series was completed in time to be used in the experimental schools during the second semester of the school year 1959-60.

---

* This section on the Audio-Visual Project was written by Hyrum M. Smith, State Director of Guidance Services, State Department of Public Instruction, Salt Lake City, Utah, and by Matthew F. Noall.

Two main purposes are to be served by the project: (1) to develop a utilization study of instructional time and teacher effort devoted to guidance material; and (2) to develop useful guidance material, not previously available, for ninth-grade pupils. To sustain these purposes, the following hypotheses were proposed:

A better utilization of teacher and counselor time will be achieved if prepared guidance lessons and vocational information are presented to pupils by means of modern audio-visual techniques.

1. Teachers' time will be conserved when: (a) two or more class groups receive vocational information at the same time by means of audio-visual techniques; and (b) teachers receive materials ready to present to class groups.

2. Counselors' time will be conserved when prepared vocational guidance lessons are available to present to student groups. As a result, counselors will have: (a) more time to work with teachers and students; (b) more time to work with occupational records and the vocational library; and (c) greater opportunity to meet pupils face-to-face and discuss the objectives, offerings, and pertinent information concerning vocations or college education.

3. More students can be reached and stimulated to a greater variety of vocational interests by providing opportunity for more students to understand the occupational library.

The research design was as follows:

Six junior high schools were selected as experimental schools. Six junior high schools, with similar economic, educational, and social characteristics were selected as control schools. About 2,000 pupils were involved in the experiment. Each pupil in both the control and experimental schools completed a personal questionnaire. The *Lee-Thorpe Occupational Inventory* was administered to each pupil. Pupils in the experimental schools were then exposed to the prepared guidance lessons and pictures. After viewing the picture stories and participating in the guidance lesson, which should be a part of each presentation, every pupil was retested with the *Lee-Thorpe Occupational Inventory* and again given the same original questionnaire. In addition, pupils and teachers from the experimental classes completed a questionnaire describing their reaction to the lessons. Also, every pupil received, through his counselor, in both the experimental and control schools, a profile chart showing his interest scores on the *Lee-Thorpe Interest Inventory*. The results of the tests showed that this information was significant to ninth-grade students in helping them to plan their educational future.

An "Evaluation of Guidance Picture Stories Pupil Questionnaire" was completed by each pupil in the experimental schools. The questionnaire furnished data on the effect of the lessons upon pupils. Such information as interest in the lessons, occupational choice before and after the study, creation of new interests, comparison of the visual and auditory impressions, and the creation of a desire for further information was gathered from each pupil. Similar information was obtained from a questionnaire given to counselors and ninth-grade teachers involved in the study.

An objective evaluation of the merits of the picture stories as used in the ninth grade of the experimental schools is not possible at this time. Only half of the proposed list of lessons have been completed. The lessons which were used experimentally were not available to the schools until the latter part of the second semester. The guidance lessons were, therefore, in a few cases an extra thrust into some course of the curriculum. Since the work could not be adequately planned in advance, it was, in some instances, an unwanted injection into a crowded schedule.

The testing program, questionnaires, and teacher evaluations did, however, provide data, both objective and subjective from which the following tentative generalizations may be drawn:

1. The use of prepared guidance information was a saving of teacher time. The professional materials which were prepared for teachers' use were beyond the scope of possibility for individual teacher preparation. Several class groups met together in a single session for lesson presentation, thus saving much teacher time.

2. Counselors' time was conserved because vocational and guidance information was prepared ready for use. The counselors found the lesson material most helpful.

3. Pupils expressed great interest in the techniques of presentation involving a narrated story as amplified by the visual emphasis. Many pupils expressed surprise at the vast number of job opportunities open to students. The need of thorough preparation for one's chosen vocation impressed most pupils. A significant number of pupils changed their original vocational choice and selected a vocation which required further post-high-school preparation.

4. Interest was expressed by pupils in having the series continued next year.

5. A very large majority of both teachers and counselors have requested the use of the entire series of lessons for next year.

6. Administrators and teachers of the state at a conference where the series was shown expressed satisfaction at the high degree of professional excellence of the prepared stories.

7. The need of using approved audio-visual techniques was revealed by comparing the results where such techniques were used with the expressed attitudes in schools where such methods were lacking.

8. The potential of the picture story for creating interest in a lesson and for increasing pupil learning was amply demonstrated.

Teacher-Team Project, Roosevelt Junior High School Duchesne County School District, Utah*

The second year of experimental experience with a teaching team at the Roosevelt Junior High School in Duchesne County, Utah, has strengthened the convictions of the teachers and administrators in relation to the merits of the new procedures. On the bases of the assembled data, the staff has concluded that the educational achievements of the pupils taught

* This section on the Teaching-Team Project was written by Wanda Riggle, Librarian; and by Lawrall Jensen, Principal, both of the Roosevelt Junior High School, Roosevelt, Utah; also by Matthew F. Noall.

by a team working with the combined experimental groups have advanced more than the educational achievements of the pupils taught by the traditional method. The statistical data for the first year of the experimental study were presented in the BULLETIN of the NASSP, Vol. 44, No. 252, January 1960.

For the purposes of this study, the experimental eighth-grade class was scheduled with a daily two-hour block of time for instruction in language arts and United States history. A team of four teachers with training and experience in the various subject areas was appointed to conduct the experiment. The principal and librarian also met with the teaching team in a daily planning session. The teachers were assigned to the project for three periods of the school day. One period was used as a group planning and preparation period. Through a redeployment of teachers and a versatile grouping of pupils based upon needs, interests, and abilities, the particular competencies of the teachers were made available to a larger number of pupils, and thus the better utilization of teacher time was accomplished.

As originally set up, the experiment was to determine whether the teaching team approach to instruction and a reorganization of the class schedule, both of which permitted grouping of pupils of the eighth grade into classes of variable sizes and abilities for instructional purposes, would: (1) better meet the needs of the pupils; (2) more effectively utilize the time and competencies of teachers; (3) provide for the use of improved instructional materials and equipment; and (4) better utilize the school plant.

Instructional groups for the teaching team were organized into divisions of four sizes: (1) the large group which consisted of approximately 100 pupils met in the auditorium and were instructed by one or more teachers; (2) traditional classroom groups; (3) a combination of two classroom groups of similar ability; (4) individual study where one or more pupils might pursue areas of personalized interest or of research according to ability. There was no fixed pattern for these groupings. The special interests and abilities of each pupil had importance in scheduling his activities.

A variety of instructional techniques devised in cooperation with the university consultant were used. Particular emphasis was given to such media as moving pictures, filmstrips, radio broadcasts, tape recordings, television, overhead projector, pictures, charts, mock-ups, and the use of laboratories, workshops, library, and community resources. The flexible grouping met the needs, interests, and achievements of all pupils, with special attention being given to the gifted and the retarded child. In the small groups, individual needs were met through individual instruction and extended library and project assignments.

At a two-week pre-school workshop, team members met with a university consultant. The preparation included previews of subject matter, objectives, methods, and allocation of subject matter to each teacher.

Written unit outlines with supplementary materials were prepared. Students were divided into groups upon ability and needs.

The research design of the experiment was based upon pre-test and post-test scores for both the experimental and control groups. The results are expressed as "gain scores" which are the differences between the pre-tests and post-tests. The test data were based upon the *SRA Primary Mental Abilities Scholastic Aptitude Test*, the *American History Test*, and the *California Reading Test*.

From the assembled test data and from the experiences during the experiment, the team has drawn the following tentative generalizations:

1. A vital part of the program is the planning period. This period is essential to plan the effective presentation of materials.
2. The team teaching technique will not change the pupil-teacher ratio.
3. Team teaching will not cut down on the amount of preparation necessary for each individual team member.
4. The large-group presentation provides more economical use of equipment and teacher time.
5. Special interest areas of teachers can be utilized to the advantage of both pupil and teacher.
6. Contrary to the expectations of team teachers, discipline has not been a problem in the large-group situation.
7. Team teaching techniques are better suited to some areas of subject matter than to others.
8. The experiment seemed to encourage and promote higher scholastic attainment among the accelerated students. Although the retarded group showed less gain, these students still achieved beyond their expected ability.
9. Ability grouping has presented no problems of social stigma, lack of leadership, or parental objections.

Chart I shows the distribution of pupil time during the second year of the experiment at the Roosevelt Junior High School. According to the record, 40.8 per cent of the pupils' time was spent in the large group and 49.08 per cent was spent in the small groups or individual instruction.

Chart II shows that each teacher spent 17.5 per cent of the time in large-group instruction. The combination of large-group and small-group instruction brought a saving of 23.6 per cent of teacher time. The saved time made possible the special preparation necessary for the success of the project.

The school district personnel is pleased with the result of the experiment. The superintendent expressed himself as follows:[5]

> During the two-year period, the steering committee and the staff involved in the experiment reported periodically to the Board of Education, to district-wide faculty meetings to which teachers from Uintah County School District were invited, and to the parents of the students in the experimental school. Demonstrations of methods used in the experiment were given to the teachers of the district, the Board of Education, and to the local Parent-Teacher Association.

[5] Letter from Rowan Stutz, Superintendent of Duchesne County School District.

CHART I

Distribution of Student Time

49.08%
Total number of classes in small groups other than the library.

7.22%
Time lost.

2.77%
Time in library.

40.83%
Total number of classes in large group instruction.

Total number of classes in small groups other than the library	531 periods
Total number of classes in large group instruction	441 periods
Total number of classes in library	30 periods
Total time lost to instruction—assemblies, testing, and other activities	78 periods

CHART II

Distribution of Teacher Time

51.94%
Teaching time in classroom and library.

23.26%
Teacher time saved.

3.88%
Time lost to testing.

3.33%
Time lost to other causes.

17.59%
Teaching time in large group instruction.

Total number of classes in conventional classroom situations. This includes periods spent in the library	561 periods
Teaching time saved	251 periods
Teaching time in large group situation	190 periods
Time lost to testing	36 periods
Time lost to other causes, such as assemblies, etc.	42 periods

As a result of this rather wide-spread understanding of the project, its nature, and its effects, there is every intent to continue this type of organization for teaching in this district.

For the 1960-61 school year, two teaching teams will be organized in the Roosevelt Junior High School. The Roosevelt Elementary School plans to use a variation of the team approach in the fourth, fifth, and sixth grades in that school. In most of the schools in the district, teachers will work more closely together utilizing each other's competencies for better teaching.

We feel, as a result of the two-year experimental study, that the superiority of the team approach to teaching as a means of more adequately utilizing the time and competencies of teachers has been clearly demonstrated. Team teaching will be an integral part of the organizational pattern of the Duchesne County School District.

Part III

Studies Completed in Previous Years

Student-librarians at Beecher, Illinois, High School pose before presenting discussion at an area meeting of state student-librarian association.

Business education students assist Beecher, Illinois, High School teacher, handling typing and filing duties for him.

CHAPTER XXI

Beecher, Illinois, Small School Study

JOHN H. FRENCH

THREE years of experimentation has left its impact upon the Beecher High School. The staff utilization projects, which were originated during the 1956-57 school year under the sponsorship of the Commission[1] and continued for three years with its encouragement and financial support, were planned to determine what changes in curriculum, teaching methods, *etc.*, would be most beneficial to the students of this small school and incidentally make teaching here more attractive to the teachers. Various changes were made and studied during these experimental years with the result that some of these practices which were innovations, at least to the Beecher staff, became an accepted part of the program during the 1959-60 school term, the first year after the experimental projects were completed as such.

MECHANICAL AIDS TO TEACHING FIND THEIR PLACES

Teachers who were introduced to the use of tapes in the classroom expanded their use of them during the past year. The business education department found them useful in the teaching of shorthand for practices and speedbuilding. Most of the tapes made by the teacher had been done under actual classroom situations during the two previous years, although some were made during the teacher's "free" time. The increased availability of worth-while commercial tapes, however, and the crowded schedule of the teacher made it practical for her to rely more and more on these commercial ones.

Enthusiastic use of tapes in the teaching of spelling in the junior high school was continued. These were tapes that had been made by the teacher during a few sessions in the summer previous to the opening of the school year and that were used for the more formal phases of the spelling program. The English arts teacher realizes of course that there is more to spelling instruction than the mere pronunciation of words and

[1] Detailed reports of the three years of experimental study can be found in articles on Beecher in the 1958, 1959, and 1960 January issues of THE BULLETIN of the National Association of Secondary-School Principals.

John H. French, Assistant to the Dean of Joliet Junior College, Joliet, Illinois, was Superintendent of the Beecher Community Unit Schools during these three years.

that, for this reason, the use of tapes has its limitation; nevertheless, their use in the proper place has become an accepted part of the classroom program because they free her from the pronunciation of lists of words and provide excellent opportunities for review and for makeup work.

Tape recorders enabled vocal ensemble groups to work more independently than previously. Groups whom the instructor ordinarily would not have encouraged to work alone were found to be making progress because of their opportunity to study their own voices as a result of tape playbacks. This gave the teacher time to develop more ensemble groups. The use of the machine for pre-recorded accompaniments for vocal and band groups was discontinued because the rhythm of an accompaniment should fluctuate with the performer and this was not possible with the machine. It soon was found to govern the performance.

Vocabulary tapes made the year previously by the German instructor again proved helpful as did the use of the recorder in enabling students actually to hear their pronunciation of the foreign words. The individual use of the tape recorders provides valuable assets to the language teacher and will continue to be used until the more expensive language laboratory can be purchased.

The use of the controlled reader, tachistoscope, reading accelerator, and the Science Research reading kits were continued in the developmental reading program with the greatest student response being noted with the controlled reader and the reading kits. The reading accelerators were used more on an individual basis with the result that only a few of the more highly motivated students made extensive use of them. It was found that more supervision was needed to get students to use these machines satisfactorily than it had been hoped would be necessary.

Professional instruction in the teaching of reading is very important, of course, to any teacher who is to assume this responsibility; nevertheless, the staff of the Beecher High School has proved to its own satisfaction that, until the time comes when an instructor with such training can be added to the staff, its students will profit from the use of selected reading aids directed by an interested member of its present faculty.

The Guidance Program Moves Rapidly Ahead

The use of a consultant in guidance to aid in in-service training during the past two years resulted in an organized guidance program in this small school which seemed to fit quite well the individual needs of its students. The professional assistance that the staff had received in gaining an over-all view of the field and in developing specific techniques began to pay off for the students. The organization plan provided for the six teachers who had the greatest amount of training and/or interest along with the high-school principal and the superintendent to serve as counselors to the students. More time was allotted to counseling, a greater use was made of the students' permanent records, additional guidance materials were added to the library, a survey was made of the last five

graduating classes to gain a better concept of what phases of guidance were most needed, and, quite important, a very fine rapport was developed between the students and their counselors.

Teachers Vary in Use of Student Aides

Fewer student aides were used this year than before, although those who did use them found it to be a valuable practice. The lack of time for adequately training a student for this service was the chief reason given for dropping the program by those who did so. The busy schedule of the better students also interfered because several who desired to do so and who were sought by teachers were unable to schedule this activity into their program. The few pupils who served in these capacities received valuable experience in handling responsibilities and performed a worthwhile service by freeing teachers for duties whereby their professional training was used more efficiently.

Library Program Continues

The inability to employ a fully qualified librarian still continued during this past year. The one who had been the acting librarian for four years and who had received consultant help under sponsorship of the Commission continued with the job. She had received her teaching certificate during this time and had earned a number of professional hours in education and library science through extension classes and in summer school.

The student use of the library continued to increase during this time, partly as a result of improved library publicity. Circulation statistics show that there continued to be an increase in the circulation of non-fiction, reserve books, and reference materials. Guidance counselors made more use of materials. Their recommendations encouraged students to seek answers to their educational, vocational, social, and personal questions. Active membership in the state student library association increased the knowledge and interest of these aides in their work.

The True Test Is Yet To Come

The staff utilization study sponsored by the Commission has stood the test of one year of time. Its true test is yet to come, however, since several members of the staff have now moved on to other positions. It is hoped that those who remain and those who replace them will not just continue to follow these practices of improved staff utilization, but rather, seek still further improvements.

Teachers in Evanston, Illinois, Township High School use a variety of technological aids to assist large-group instruction. Closed-circuit television is available. Here Wanda Mitchell uses the overhead projector. Small-group discussion accompanies the work with 100 or more students in the large groups.

CHAPTER XXII

Evanston, Illinois, Township High School Reports on Five Years of Projects, Including Television, Team Teaching, and Large and Small Group Instruction

BARBARA S. PANNWITT

THE word *project* took on a new connotation at Evanston Township High School five years ago. Experimentation remained implicit in the word, to be sure. Like other projects conducted at the school previously, those initiated during the past five years have been designed for the purpose of improving academic instruction. The added dimension to the meaning of *project*, however, has been to incorporate into each experiment the aim of better utilizing teacher time and talent, providing more adequately for pupils' individual differences, and making wider use of audio-visual aids. *Staff-utilization* has become synonymous with *project* in Evanston.

A precursor to projects undertaken by the Commission on the Experimental Study of the Utilization of Staff in the Secondary Schools in cooperation with the Fund for the Advancement of Education was an experiment in using closed-circuit television at Evanston High School. Partially subsidized by the Fund, a two-year project of planning, installation of TV equipment, instruction in speech arts and typewriting, and evaluation of the results began in 1955. By the end of the two years, the high school was convinced that TV is indeed a tool that better utilizes teacher time and talent and thereby improves the effectiveness of instruction. The school has supported its own TV system ever since, and, though no course is presently taught entirely *via* TV, the tool is used as the instructional need arises in every academic department and is employed for guidance and counseling purposes and in connection with extracurricular activities.

Although Evanston High School has not had additional subsidies through the Fund and the Commission since 1957, that first TV project triggered off enthusiasm for a series of staff utilization projects, all of which are in progress now, financially supported by Evanston High School's own Board of Education.

Mrs. Pannwitt is a Team Teacher in English at Evanston Township High School, Evanston, Illinois, and director of that school's press bureau.

The major type of project has been team teaching with varying class sizes (20 for discussion purposes, 200 for lectures); increased use of clerical, non-teaching aides; extended use of all types of audio-visual aids, especially TV, the overhead projector, tape recordings, films, and modern electronic language laboratory equipment; and the employment of lay readers of English compositions.

In September 1957, Evanston High School initiated its first teacher-team projects—a course in Senior English for 240 students taught by four teachers; a Business Education course for 75 students taught by two teachers; and a Speech Arts Survey for 100 freshmen taught by four teachers. These three courses were repeated for two years, and, as a result of their tested success, 12 different teacher-team projects were conducted during 1959-60 by 32 instructors for 2,500 students.

These 12 courses and three new ones, all with some revisions of personnel and syllabi, are being conducted during the 1960-61 school year.

The English department offers two team-teaching courses. In 3 English there are 15 sections of average juniors (30 per section) meeting in three periods, five sections each of the periods. Seven teachers are participating as a team: four experienced teachers are lecturers to the large groups (150-200) and three new teachers are internes for in-service training. There is some attempt in grouping according to ability within the average-ability range for discussion purposes.

In 4 English, which is primarily a humanities-centered course, there are 241 better-average and honors pupils in seven sections meeting in two different periods with five cooperating teachers. All five are lecturers in the large groups. There are two honors sections, one each of the two periods, and five better-average sections, two during one period and three, another.

Each English project uses the overhead projector and other A-V tools in large groups. Lectures are taped so that absent pupils may "make up" lectures. Some use is made of closed-circuit TV. Each English project has the services of a clerk shared with the social studies projects.

Twenty-one lay readers, chosen by examination and interview from 135 respondents to a community-wide invitation, assist full-time English teachers in reading compositions so that more may be assigned. Each lay reader may so assist each teacher for 150 hours.

This year the English department is also bringing together all freshmen, sophomores, and juniors by year level for two-day orientation presentations of the required Shakespearean plays. As still another staff utilization innovation, all freshmen are being taught a unit on the use of the library by one of the librarians rather than by their respective English class teachers.

The social studies department at Evanston High School has four team-teaching projects: two of three teachers each, one in the first year and the other in the second year of the History of Civilization course; two of

four teachers each, one in United States history and the other in American Problems. Each team is under the direction of a teacher more experienced than the others, but all teachers share in large-group instruction during the year. The sections range from 86 to 103 pupils, each team being in charge of one class except the United States history team, which instructs two different classes.

The science department conducts a team-teaching project in biology. The personnel involved are three full professional staff members and one part-time clerical worker. The professionals work on a cooperative basis, sharing planning and responsibilities. The clerical worker types, mimeographs, marks papers, and keeps pupil records. One of the professionals lectures while the other two handle laboratory activities. The large group is divided into two units, and the arrangement permits lecture-lab to alternate for each unit on succeeding days.

In all teacher-team projects at Evanston, students are divided into large or small groups, depending on the nature and purpose of each particular lesson to be taught. Time saved in a teacher's day is used to increase the number of individual teacher-pupil conferences.

Other teacher-team projects are: Junior Combined Studies (English and United States history) for 60 students in one class period taught by one experienced and one beginning teacher with the assistance of a lay reader; Introduction to Business for 90 students in one class period taught by two experienced teachers; Driver Education for 100 students for one daily class period for six weeks (a total of 950 students a year) taught by three teachers in large group, Drivotrainer class, behind-the-wheel instruction, and weekly discussion groups; Freshman General Mathematics for 125 average and below-average ability students taught during one period by two experienced teachers; Sophomore Plane Geometry for 90 above-average, average, and below-average ability students during one period taught by three experienced teachers; Speech Arts Survey for 250 students during two periods taught by five experienced teachers.

The three new project courses in 1960-61 are Junior Health Education, Freshman Social Studies and English (for slow-learners), and Business Law. Two experienced teachers are working together as teams in each of these courses.

In a room equipped with 36 soundproof booths and the latest electronic devices for a language laboratory, foreign language students (Spanish, French, German, Latin, Russian, and Greek) are receiving oral-aural training supplementary to regular classroom work. Only one teacher is required to work with a group of students who may represent many stages of progress in learning a foreign language, because he can use the control console that enables him to communicate with pupils working on a variety of practice lessons. The control panel permits five program channels to be played simultaneously from eight various sources including tape cartridges, tape reels, a phonograph turntable, film projector sound track, and auxiliary inputs.

The staff utilization or project "fever" at Evanston continues with planning underway to experiment even further. Chief among new projects in the blueprint stage is provision for physical facilities and staff supervision of students undertaking independent study. Laboratories for independent study are already in operation for Advanced Placement senior students of English and for gifted students in the Mathematics-Science Seminar. Ways and means of superimposing a more flexible schedule of the school day upon the present traditional Carnegie unit schedule are also being studied by Evanston High-School faculty committees.

CHAPTER XXIII

Fairfield, Illinois, High School Develops Independent Study Skills in American History

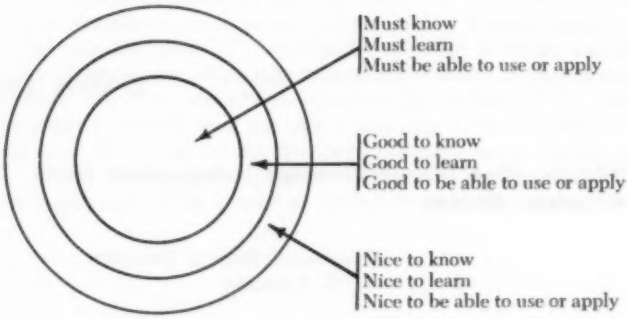
MARGARET SPENCE THACKER
H. C. LARGENT

EDUCATORS have become more and more concerned because students do not seem to acquire sufficient abilities in independent study and thinking. Often through faults other than their own, the majority of students do not know how or what to study. This project was concerned with teaching students to develop study skills by applying certain methods to the study of American history, so that students might develop the ability to classify and evaluate content as to worth and value, and, thus, to read and study more effectively.

THE PLAN

One way that these skills may be obtained is through the use and expansion of the Navy Target Plan. The *must's* include only a small portion of the content. Some inclusions follow: (1) the broad principles or theories; (2) those learnings which have to be acquired for understanding of future content; (3) opinions of important groups and individual authorities in the field; (4) if applicable, the implications of the content as related to everyday modern living; and, (5), if applicable, the determination of pertinent parallel relationships or differences between the past and the present. The middle ring in the target contains the *good* classification. Included are: (1) expansion of the *must's* to the extent that they are understood; (2) the implementation of broad principles or theories; (3) that which furthers the understanding of broad principles; and (4) some background or examples. The outer ring in the target contains the *nice's*. Included are: (1) filler material; (2) expansion of that which is good to know; and (3) material which only the better students would understand or remember.

Margaret Spence Thacker is a Teacher in, and H. C. Largent was the Principal of the Fairfield High School, Fairfield, Illinois. Mr. Largent has since accepted a position with Southern Illinois University in Carbondale, Illinois. This plan to develop independent study skills was developed by Clarence W. Stephens of Southern Illinois University.


Must know
Must learn
Must be able to use or apply
Good to know
Good to learn
Good to be able to use or apply
Nice to know
Nice to learn
Nice to be able to use or apply

Method of Presentation

The students were given a general idea of what we would be trying to accomplish. They were invited to ask questions to clarify any items they did not understand. At this point, they showed a decided interest in what we would be doing. The class discussed the essentials in learning how to study and agreed on five points which they felt were bare essentials.

The Navy Target Plan was explained and illustrations were used to show the students what to look for in studying. The class was assigned Chapter I. They were told to scan the chapter, then attempt to list the *must's* and *good's* from a second careful reading. The importance of reading the material prior to discussion and classification was stressed.

The instructor works with the class group during class discussions in selecting the *must's* and *good's* from the chapter, emphasizing why a particular sentence or passage is a *must*. A follow through with Chapter II, using the same procedure, was completed. It became clear to the students that their opinions would differ widely among their peer group as well as with the instructor. Before one of the class periods during which the first two chapters were being analyzed, the teacher introduced the procedure to be used in the workshop technique.

Workshop Way of Learning

The general techniques used in this particular study are listed. There are variations which can be utilized in more advanced groups.

1. Each class was divided into four groups of about eight students.
2. Each group selected a chairman and a recorder.
3. The chairman and recorder were changed so that each member of the group served in each capacity.
4. The chairman obtains the opinions of each participant as to *must's*, *good's*, and *nice's*.
5. Majority opinion prevailed; however, the recorder was able to indicate to the other recorders or to the total class the degree of acceptance by his own group.

6. The teacher met with the chairmen and recorders of the groups and discussed with them their responsibilities. Through discussion with their group, she helped them draw up a list of rules which aided in accomplishing their objectives.

7. The teacher called the class together, even after they were working in groups, to review workshop procedures and to clarify any points necessary.

8. Each group classified content in the same chapter.

9. The teacher visited each group to check on procedures being used and progress being made.

10. After all groups had finished, the recorders met as a group, selected a chairman, and exchanged group opinion. An alternative is for each group recorder to report to the class as to the classification made by his own group.

11. The teacher expressed her opinion relative to the classification of content.

12. The class had an opportunity to contribute further to the classification.

Aims

At the beginning of this experiment, six basic aims, which it was hoped would promote efficiency of study and learning of content were listed. The aims listed were:

1. To teach basic, fundamental knowledge of American history
2. To help the student acquire skills in how and what to study
3. To stimulate the student to independent study and thinking
4. To help the student acquire skills which would aid him in his present and future needs
5. To help the student gain ability to make decisions upon weighing the evidence available
6. To help the student acquire the ability to evaluate himself.

A discussion of the aims and their evaluation appeared in the January 1960 issue of the NASSP Bulletin. During the 1959-60 school year, we continued to evaluate these aims. The Target Plan was used in all classes of American history. It was found to be as effective as when it was used in the two experimental classes the previous year. The only problem that developed was in two classes which we found were not heterogenous. Since about 40 per cent of the students in these classes were below average, it took these classes much longer to develop effective study skills than in the other classes which were heterogenous. This seems to indicate that a conscious effort should be made to arrange heterogenous classes to insure maximum success.

Function of the Teacher

The attitude of the teacher is of vital importance. Enthusiasm, interest, and well being of the class are dependent on the teacher's interest and enthusiasm. The teacher faces a real challenge in guiding the students to learn, evaluate, and decide for themselves. Past conditioning will tempt the teacher to desire to tell the students what to learn. The students will try to get the teacher to evaluate the material for them. This is natural because both teacher and student have developed this traditional role over

the years. The teacher should understand and guide, but she *should not weaken.*

Conclusion

At the beginning of the first year, three possible values of this Study were listed. They were:

1. Future teachers would have a procedure by which they could teach their pupils how to study.
2. Teachers would analyze their presentations somewhat more carefully.
3. Students could be expected to do more independent study and constructive and reflective thinking.

These values and aims were confirmed during the second year and the intangibles were even more significant. The students independently used reference books, read more on related subjects, and consulted the dictionary without being prompted. They gained from association with a small group while developing their learning skills. They regarded the teacher as a member of the team guiding them toward maturity, not as a person who dominated them and told them to learn this or else!

My opinion was confirmed that, if the physical facilities were available, classes of 50 students could be handled as effectively as a class approximately one half that size.

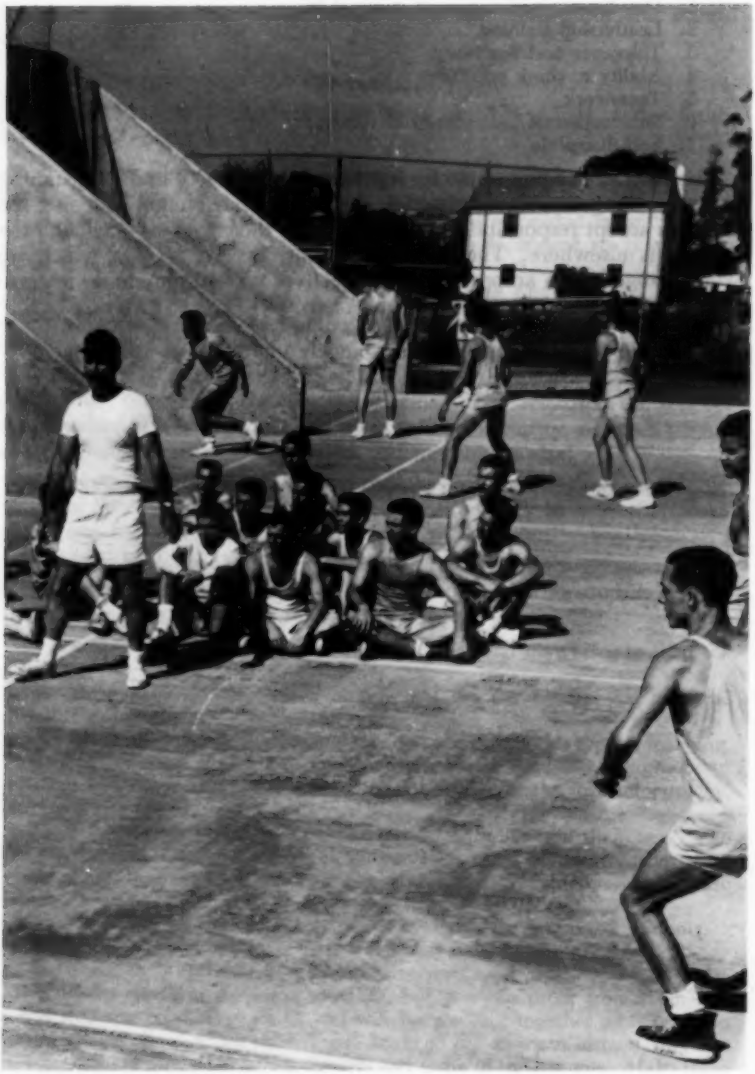
In looking back over the last two years, I feel that the suggestions listed below will be of definite value to those who may plan to use this type of instruction in the future. They are *Do's*–

1. Keep a diary–a line or two a day–so that you may refer to it in the future.
2. Have patience–the first 6 or 8 weeks are the hardest for both the instructor and students.
3. Remember the students have had no experience in this type of teaching.
4. Expect some students to take longer to understand the importance of preparing and discussing their work without waiting for the instructor to say, "learn this."
5. Have a quiz now and then to keep lazy students on their toes. The need for this will be almost *nil* as you go into the second semester.
6. Encourage sharing of opinions and material gained from outside sources.
7. Have ideas, sources, and materials available for interested students.
8. Praise a group and/or a class when they have done a good job.
9. Share their enthusiasm, problems, interests, and ideas.
10. Relax–you'll make some mistakes, but you can profit from them and let the students know that all of you will be working together as a team on something new about which *nobody will know all the answers;* instead, together you may hope to find some of the answers and share in the benefits. Make them partners and they will respond.

Finally, at the end of the second year, I felt that the Target Plan had many advantages. The students have improved in varying degrees in these accomplishments:

1. Development of improved study skills
2. Leadership training
3. Tolerance and flexibility
4. Ability to think critically
5. Teamwork
6. Satisfaction of individual differences
7. Self-discipline

The teacher has more time for individual conferences and for planning and presenting interesting material; she has the satisfaction of seeing the students accept responsibility to work toward their goal, even though the teacher is elsewhere. The relaxed, yet businesslike, way in which we worked together to accomplish our objectives was an enriching, rewarding, and profitable experience for all of us.



While instruction in handball is given to a small group of boys, the other teacher and two aides are giving instruction to other groups in tennis, volleyball, and baseball in other parts of field. The aides in the San Diego, California, city schools are students enrolled in San Diego State College.

CHAPTER XXIV

Richwood, West Virginia, Initiated Use of Bus Drivers as Teacher Assistants in Driver Education

CLARENCE A. BROCK

IN THE school year of 1956-57, an experiment sponsored by the Commission on the Experimental Study of the Utilization of the Staff in the Secondary Schools was conducted in West Virginia. The study was an effort to discover the effect of using qualified school bus drivers as asistants to certified driver education teachers in high-school driver education programs. The experiment was reported in the January 1958 NASSP BULLETIN and a follow up re-check of the effect on driver attitudes was described in the January 1959 issue of this publication.

The hypothesis tested was: the use of a selected laboratory assistant to teachers will not jeopardize the quality of the driver education course and will make it possible to use the teacher services more efficiently.

The State Board of Education gave permission for the experimental program that would make possible the use of school bus drivers to serve under the supervision of qualified teachers. The requirements for their selection were also set up to include definite elements of preparation and personal characteristics.

To be eligible for the driver education assistant permit the school bus driver must have met the following conditions:

1. Has attained high-school graduation or a high-school equivalent diploma.
2. Has completed a college course in driver education, which may consist of a regular course or summer workshop conducted by an approved college.
3. Has passed a test prepared by the State Department of Education and the State Department of Public Safety.
4. Has the recommendation of the county superintendent by whose board of education the applicant is employed. The recommendation was based on the following characteristics of the applicant: (1) reliability; (2) moral character; (3) dependability; (4) cooperativeness; and (5) skill in the control of young people.

The experimental project, using equated groups in comparable high-school and community situations with the experimental factor being the

Clarence A. Brock is State Supervisor of Secondary Schools, State Department of Education, Charleston, West Virginia.

school bus driver as the laboratory assistant, resulted in the following conclusion:

> Selected school bus drivers can be used as laboratory assistants to qualified teachers without endangering the quality of work in the advancement of driver knowledge and driving skills. While the original experiment left some doubt in the area of driving attitudes, the re-check experiment (see NASSP BULLETIN, January 1959) indicated that students who were in a program where bus drivers were used to give the "behind-the-wheel" phase had as good an attitude toward driving as those in the traditional plan. Although the experiment indicated that there was some reduction in teaching costs, the real advantage was in the more economical use of professional teacher time.

Because of the experiment, the temporary premission to use school bus drivers in the driver education program as laboratory assistants is now considered to be a permanent permissive policy. Yet, in the 1959-60 school year, only six of the 113 high-school driver education programs used school bus drivers as assistants.

The 107 high-school principals having driver education but not using school bus drivers as laboratory assistants were asked these two questions: (1) "Do you know of the plan to use school bus drivers in the driver education program?" and (2) "Although the plan is only permissible and this is not to suggest its use, why are you not using it in connection with your driver education?" There were 91 replies. All answers indicated that they knew of the plan. Sixty eight said, "Our school bus drivers cannot qualify under the regulations." Twelve of the 68 said the standards for eligibility were too high. Eleven said, "Our present plan is working, why change it?" Seven replied, "We cannot agree that mixing school bus drivers in the school program is a good idea." There were five other answers ranging from "We are not ready" to "I can't sell the idea to my superintendent."

The experiment is over and it has served its purpose by showing a way to help solve a teacher shortage problem. Its future application is still in question. School bus drivers who can qualify under the rather strict regulations and who will work the extra long day required by the bus driving duties plus the driver education responsibilities are now, and may continue to be, in short supply. The sincere feeling by many school people that this type of departure is an encroachment on the teaching profession is another factor to be considered. Nevertheless, we now know that driver education can be carried on with highly qualified school bus drivers acting as teacher laboratory assistants without seriously jeopardizing a driver education program.

CHAPTER XXV

Roseville, Minnesota's Alexander Ramsey High School's Experimental Project in Science Becomes a Part of the Regular Program

CURTIS JOHNSON

IN 1956 we had some ideas about a project that we wished to put into operation, but we were not certain as to how it could be done or the effect of it. The ideas were discussed with teachers and students and the opportunity was provided by funds from the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. Our project was to provide extra time for our students in the laboratory. Several problems confronting us were: the provision of time, the acquiring of personnel to supervise this extra time, and the question of whether or not it would be beneficial to the students.

We believed that our students should learn the basic academic material, but, in addition to this, they would learn a great deal more if they had the opportunity to work experimentally in the laboratory. All of our students in grades 10 through 12 take at least one science course. The courses that we provided were: general biology, applied biology (conservation), general chemistry, applied chemistry, general physics, applied physics, and electronics. Our facilities are adequate to the extent that each student has the opportunity to do some laboratory work in the regular class period. The instructor required a project of all students. These projects were to be made either in the lab or at home.

To provide the extra time, we utilized the daily activity period from 12:30-1:30, Saturday mornings from 9:00-11:30, and Tuesday afternoons from 3:45-5:00. The participation was good with the exception of the Tuesday afternoon period. Participation during these extra times was voluntary for the students.

Our teachers carry a heavy load and could not be expected to supervise these extra periods, so we hired (at the rate of $4.00 per hour) two students from the University of Minnesota who were working on their M.A.'s, one student from the University who was finishing his Ph.D. in chemistry, two undergraduate students who were majoring in science, and one man from industry who had his college training in science and is an engineer

Curtis Johnson is Principal of the Alexander Ramsey High School, 1261 Highway 36, St. Paul 13, Minnesota.

at the Minnesota Mining and Manufacturing Company to do the supervising. The variety in experience and training helped us in our later planning for our present program. A detailed report of the first two years of our project can be found in THE BULLETIN of the National Association of Secondary-School Principals, January 1959.

PROGRAM 1959-61

Interest in science has increased since the beginning of our program. The general pattern of our original program is still in effect, but a number of refinements have been brought in as a result of our experiences during these years. During the last year, our average participation each day during the activity period was about thirty students. The Saturday morning average was about twenty-five. Our Tuesday afternoon period was shifted to Tuesday evening from 7:30-9:30. The average participation on Tuesday was about fifteen. In the evening group, there were three main areas of interest—Taxidermy Club, Chemistry Club, and Astronomy Club. We believe that the participation this school year will increase in each of the three areas. Originally, we allowed the students to work in any area of their interest, but we learned that it was better to limit the areas such as we have done in the Tuesday evening program.

Having deviated from our original plan of supervision by outside personnel, we are presently using our regular science teachers for this purpose; the reason being that we attain better results from the students by utilizing our own teachers in this capacity. We hired two undergraduate students to work at school during the school day to relieve the regular teachers of some of their duties. The one exception to this deviation was the Saturday morning program where we have employed the same man since the program began. In addition, we have one of our regular science instructors supervising on Saturday morning.

The quality of the work has been improving each year and our course offerings have been changed to try to take care of students of a wide range of ability and interest. In biology, in addition to the two previously mentioned courses, we use the Biological Sciences Curriculum Study Course. This is an experiment with the setting up of it being done by a number of selected biology teachers, one of whom is a member of our faculty. It is sponsored by the National Science Foundation. In physics we brought in P.S.S.C. (Physical Science Study Commission) for a very select group. In chemistry two of our classes use the Chemical Bond Approach Method.

PROJECT REQUIREMENT

In our original experiment, all students made projects. We have altered this requirement so that some of our students are required to participate in a search of science literature. They must have knowledge of and know how to use community literature and resources such as libraries and industrial plants. They investigate a particular science topic and read

all available information about it; *e.g.*, fluorochemicals. The student checks the libraries in the Twin Cities, the University of Minnesota, and the Minnesota Mining and Manufacturing Company. They write a paper on this accumulated knowledge, using the standard style of a science paper. This method brings meaning of science to them and will also be of value in developing their literary ability. Students of greater ability are required to carry on a scientific investigation. It is not required that they make a project for display such as might be made at home with too much parental assistance, but they write up their scientific investigations. This investigation will lead to a great deal of reading, will encourage experimental work, and may lead to the making of a project. We want original projects, not copies of others made by students from other schools.

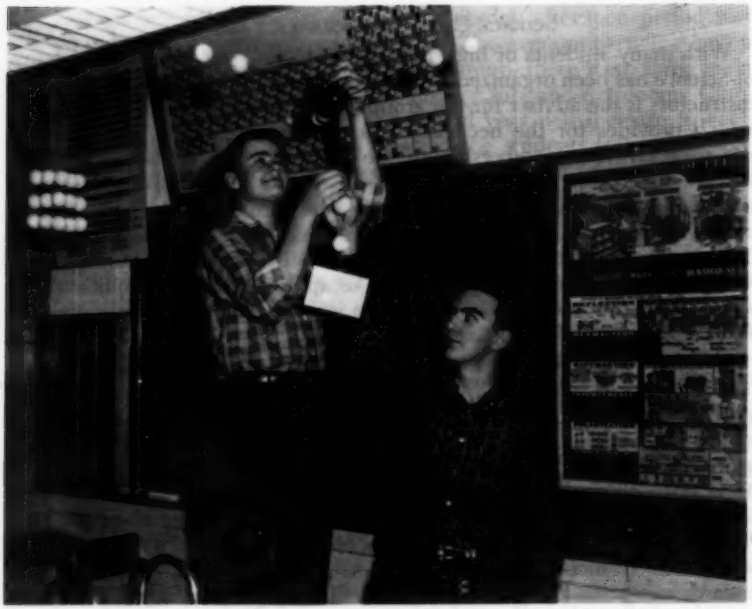
Science Clubs and Science Fairs

With many students of high interest in science, our Ramsey Academy of Science has been organized and functions very well. One of our science instructors is the adviser for the group. They have their own constitution which provides for the necessary officers. The following qualifications are necessary for membership in the academy: the student (1) must receive some form of recognition in science; (2) must have an interest in science as a future vocation; (3) must be enrolled in a science course each year in high school; and (4) must have a scholastic average of B. The membership at the present time is limited to twenty. A student who wishes to become a member must make application. The application is acted on by the student members of the local academy of science and the faculty members of the science department.

Many of the students have entered projects in our local science fair. The local fair is sponsored by our Ramsey Academy of Science. Students participating are from our two junior high schools and Ramsey, the senior high school. These projects are displayed during the day in the gym and the schedule is arranged so that our student body may see it. It is open to the public in the evening with an admission charge of 25 cents for adults. The admission receipts cover the expenses of the fair. The projects are judged by instructors from the University of Minnesota and other science-trained people from industry. During the evening, awards are presented to the winners. The top projects of the local fair are entered in the Regional Science Fair with the Winners going on to the State Science Fair which is sponsored by the Minnesota Academy of Science. Many of the students have been successful and this group has acquired status in our school. For example, one of our junior high-school students who entered the tenth grade at Ramsey this year, and is very much interested in science, last year wrote a letter of application for admittance to the Ramsey Academy of Science. This past year Fairview Junior High School, one of our junior high schools, received the Harvey Award given by the Minnesota Academy of Science to the outstanding school. This award is based on participation and quality of projects.

PROSPECTIVE

The increased opportunity has resulted in an upgrading of the work of the students. This improvement has had a definite effect on the attitude of our students. They have pride from doing a very good job and they have gained status. Parents are naturally enthused with this progress. Since the Board of Education and the administration see the value of the program, the financial support of it has become a regular part of the budget. We are very happy that this experimental project has become a pattern for instruction in our high school. We hope to make minor changes or refinements each year in the program and have it as an essential part of our curriculum.



Two general chemistry students hang up their model of Cobalt Carbonyl Hydride $[Co(CO)_4H]$. This unusual type of cobalt-hydrogen bond was publicized in the November 17, 1956, issue of *Science News Letter*. Several of the students wrote to Dr. W. Edgell at Purdue University to find out more about this particular bond. The information that Dr. Edgell sent enabled the Ramsey students to construct this model.

CHAPTER XXVI

Snyder, Texas, Continues Team Teaching

T. E. McCollum
C. D. Henry
Wm. O. Nesbitt

THE Snyder, Texas, Staff Utilization Project was designed to study the possibility of teaching large groups of students (60 to 100 students) in a class by utilizing mechanical devices and the outstanding strength of teachers in a "teaching team" approach. These "teacher teams" were composed of teachers of the same subjects plus the assistance of clerical aides to help with routine administrative details of the classroom operation. Control classes of normal size (25 students) were set up and taught by the same teachers on an individual basis. In the conclusions to the experiment, it was found that the students in the large class groups learned as much as those in the small control classes. Large-group instruction was made possible through the use of electronic and mechanical devices such as closed circuit TV, tape recorders, motion pictures, filmstrips, slides, and over-head projectors.

Two Years Later

During the 1959-1960 school year, several realizations concerning the Staff Utilization Project in Snyder were brought into focus. Many techniques and methods which were used in this experimental study have carried over into the regular classroom work this year. In an experimental project, such as the one completed in Snyder in August 1959, there are so many interrelated factors that it is difficult to say one is good and the other is bad. The methods and procedures were not isolated to the extent that one could be used without involving all or parts of the other. We found some devices and approaches were not satisfactory. These were abandoned. The use of closed circuit TV did not prove successful in teaching large groups of students. Some of the reasons were: (1) cost of equipment; (2) trained, skilled technicians to operate the electronic devices; (3) physical arrangement of the school plant; and (4) lack of teacher-pupil contact.

T. E. McCollum is Superintendent, C. D. Henry is Curriculum Director, and Wm. O. Nesbitt is Project Director in the Snyder, Texas, schools.

Teacher Teams

The "teacher team" approach was probably the most desirable of the utilization project outcome. Some advantages are: (1) teachers may use their strengths to a better advantage; (2) more time is available for lesson planning; and (3) better presentation results through better preparation. However, some of the disadvantages are: (1) first-year teachers come to depend on older teachers and clerks too much; (2) turnover in teacher personnel keep the "teacher teams" in a constant orientation and training phase (in the Science department of Snyder High School, there has been a 100% teacher turn-over since the project began in September 1956); (3) scheduling blocks of time for any given subject is very difficult; and (4) teaching seems to become more subject matter centered than student centered.

The use of the over-head projectors in this project has had a very definite effect on the teaching in some subject areas. We all agree that this mechanical device is very beneficial in presenting visual materials; however, as a word of caution to those just beginning the use of the overhead projector, do not let this media become the center of your teaching. This can be over-used just as the motion picture projector or any other mechanical device.

In the final analysis, I would say this: the ideas, techniques, methods, and mechanical devices that were tried here in Snyder, and did not prove worth while in strengthening teaching were just as valuable and important to the over-all program as those that did prove beneficial. The scientific approach to any problem is usually by a process of elimination. When you have eliminated and discarded the things that do not work toward strengthening your educational program, then the things left will be of use in building the foundation for better learning opportunities.

From the Staff Utilization Project experiment, the personnel of the Snyder teaching staff gained many insights into the problems facing schools of America today. They realize the public is demanding a better product from the secondary schools, and it is a joint responsibility of teachers and administrators to find better and more economical ways to produce this product.

During the 1959-1960 school year, team teaching was carried on in the general science and biology classes. The opening of a new junior high school and changing from the 6-2-4 grade plan to a 6-3-3 split the teaching teams and made it impractical to continue this approach in the junior high-school science or language arts for this school year. We have continued a "teaching team" in biology this year. However this team does not have clerical aides, but is scheduled in a four-period block with two periods each day for teachers to make preparations.

The success or failure of any method or approach to teaching depends on the teacher in the classroom. Enthusiasm, initiative, skill, and consecrated efforts on the part of the individual teacher are the controlling factors in determining whether any one method or approach is better

than any other. The attitude of the teacher toward the task to be done will out-weigh all electronic, mechanical, and visual "gadgets" that can be employed.

Review of the Data *

The Snyder project was an experimental study of the relative effectiveness on learning in selected high-school subjects of the conventional methods *versus* a composite of procedures involving modern educational media in addition to classes of varying sizes, team teaching, and teacher aides. Although the project dealt with new approaches to teaching and learning, subject matter was not a major factor for analysis. The experiment was conducted in a typical public high school without disrupting the usual six-period schedule.

Experimental groups were taught by teams of teachers with clerical assistance supplied by teacher aides. Control groups were taught by the same teachers much in the same manner as similar classes were taught in the school system. There were two control and three experimental classes, each in biology and general science. Two controls and one experimental were used in language arts.

The design set up in advance observed rigorous experimental principles in order to reach valid conclusions. Data collected were analyzed statistically to answer the following questions:

1. Did the class as a whole achieve significant growth?
2. Did the class become more variable, or less variable, by the end of the experimental period?
3. If significant differences were found in achievement, what was the relative effectiveness of the contrasted treatments?
4. What was the differential effect between treatments after an interval of three months?

Briefly, the findings from the statistical treatment of the data indicate that each class did achieve significant growth in subject matter; that, with the exception of language arts, classes tended to become significantly more variable as the experiment progressed; and that there was a significant difference between the two methods of instruction in biology and general science, but not in language arts. The difference was in favor of the control class treatment in biology, but it was in favor of the experimental method in general science. No signficant difference was noted between the two methods of instruction in language arts. Finally, no significant differences were evident when the data were analyzed to show the differential effect between treatments after an interval of three months.

The apparent contradiction that appeared when the two methods of instruction were pitted against each other may be accounted for by the failure of one teaching team to make full use of all opportunities for improving instruction offered by the uniqueness of the teaching-learning

* This part of the report was written by William O. Nesbitt, who directed the Snyder Project. He recently completed his doctorate at the University of Texas.

situation in the experimental classes. This is not in any way meant to be critical of the biology team. Circumstances beyond its control dictated many decisions to it. The pertinent point is that, when analyzed in subjective terms, the experimental method in this particular instance was not at its best when it was pitted against the control method. On the other hand, when the philosophy of teaching as revealed by the differentiated classroom activities of the general science team was put into operation along staff utilization lines, greater quantity of learning and improved quality of teaching resulted.[1]

While statements relative to the amount of subject matter learned can be interpreted in terms of the statistical evidence, those concerning quality teaching cannot. In order to give some evidence of the quality of teaching produced by teachers in the staff utilization project, teams of observers from liberal arts as well as education colleges were employed. The actual words of these observers cannot be improved upon for the purpose of conveying appreciation of the instructional aspects of the project:

"I saw teachers talk eagerly about the best ways of teaching this or that information, idea, or activity and then carry the previous day's plans into effective and efficient action. I saw the most amazing compilation and use of top-level audio-visual materials I have ever seen in one school setting. . . ."

"I saw the best student-teacher relations of my career. Teachers moved from room to room with ease. Students asked questions, made suggestions, and helped each other with amazing ease and purposefulness. . . ."

". . . the project seems to me to be a worth-while one with advantages not only in better learning and more effective use of staff, but also in the encouragement of student individuality and in the teaming of an older teacher with a younger one. . . ."

"I was tremendously impressed with the way . . . teachers used visuals and other materials and aids. They were not just playing with gadgets, either; I saw no examples of purposeless piddling around with things. . . ."

"I suppose that the one thing that fascinated me most was the team teaching that I observed."

The following statements relating to improvement of instruction can be substantiated by evidence collected during the course of the subject:

1. The philosophy of teaching and learning held by teachers revealed by their behavior in the classroom seems to determine the extent to which full advantage will be taken of the opportunities offered by staff utilization procedures to differentiate instruction.

2. Regardless of the philosophy of teaching and learning held by teachers, they respond enthusiastically to the opportunities offered by staff utilization procedures to function more efficiently and professionally.

[1] For a complete analysis and interpretation of the data, refer to the author's dissertation, The University of Texas, June 1960.

3. Previous training and experience of both students and teachers are pertinent to the full implementation of staff utilization ideals.

4. The proper use of a cross-media approach to increase the quantity learned is an integral part of the teaching technique associated with staff utilization.

5. Time for teachers to plan lessons and to prepare teaching materials together is absolutely essential to the team teaching concept.

6. Teachers can and do learn to use teacher aides effectively and efficiently for nonprofessional jobs.

7. The usual evaluation devices employed in the classroom fail to measure the entire worth of a teaching situation. This may account, at least in part, for so many "no significant difference" reports.

8. Acceptance and implementation of staff utilization practices lead inevitably to an ever-changing curriculum in accord with accepted needs.

9. There is evidence to warrant further study of the relationship between staff utilization practices and ability grouping procedures.

10. There is evidence to support the theory that installation of staff utilization procedures will permit continued improvement of educational opportunities without getting out of line with other costs.

11. Staff utilization practices can be employed effectively only by a school administration fully committed to the improvement of instruction.

CHAPTER XXVII

Westside High School, Omaha, Nebraska, Continues Teaching Spanish and Spelling Partly by Tape

Mrs. R. E. Gibson

By THE end of the third year of experimentation with the use of tape recordings for the teaching of beginning Spanish and spelling in the seventh grade, the administration was satisfied that the use of such did not result in inferior teaching. Statistically, it appeared that in certain cases the use of tape recordings improved the quality of work performed by the seventh-grade pupils. It was noticeable, however, that a personal thirty-minute visit once every two weeks by the Spanish consultant to every classroom greatly augmented the classroom teachers' and their pupils' interest in the program. Since most of the classroom teachers have had little or no experience in the field of foreign languages, an element of security was added by this innovation.

Two major problems still remained; the further reduction of costs and maintenance, and the production of tapes of finer audio quality.

Tape recorders in individual rooms worked well when only a few classrooms were involved and the recorders were new. Now, with fifteen seventh grades to receive several broadcasts daily, the constant minor repairs to the recorders and the number of tapes to be handled and to be kept in perfect condition were becoming a nuisance.

It was decided to house all fifteen seventh grades in a new wing being added to the Westside Senior High School, to install a high fidelity PA system, and to broadcast into these rooms *via* loudspeakers. All rooms were to receive simultaneously a twenty-minute Spanish program and a twenty-minute spelling program daily. Twice a week these same rooms were to receive a music appreciation program in like manner. Some broadcasts would be pre-taped; others were to be broadcast directly by microphone.

The final wiring was not completed until after Christmas; therefore, the program was begun in the second semester. The director of the three previous years found it necessary to be absent from the city for several months; consequently, the program was put into new hands. Mrs. Ora Zocholl, experienced in the teaching of Spanish but inexperienced in handling such a program, took over the daily broadcast and class visitation. In spite of the changeover in personnel, after a few weeks of trial and error, the program went smoothly forward partly through the use of

Mrs. R. E. Gibson is the Director of the Project, Westside High School, Omaha, Nebraska.

pre-recorded tapes and partly through direct microphone broadcast using the procedures discovered in previous years of using tapes only.

At the end of the year, it was acclaimed by the classroom teachers and pupils an outstanding success. That the district has faith in the future of this type of teaching is attested by the fact that similar PA equipment has been installed in the second recently completed junior high school, and a similar centralized program of Spanish, spelling, and music appreciation will be followed. In fact, the possibility of hooking the two schools together by leased telephone wire is now under investigation. If this can be worked out, a single broadcast will be received in both schools at the same time.

We consider the programming still in the developmental stages. Live broadcasting from prepared script has proved unusually attractive because of the timely touches that can be given from time to time by the broadcaster, but there is no reason why a basic set of tapes for the Spanish, spelling, and music appreciation cannot be prepared to be used by the broadcaster much as a housewife uses a prepared cake mix giving it her own personal finish. This will assure continuity in spite of changes in personnel, and yet allow the broadcaster to give each daily broadcast her or his own personal touch. The script for tapes of this type of Spanish broadcasts are being tried out experimentally this year.

The final recording of such tapes of high audio quality demand professional equipment such as professional recorders and tape duplicators, a soundproof recording room, sound engineering, and trained recording artists. One possibility is for the school to broadcast live from prepared script, a second possibility is for the school to purchase the above equipment and produce its own tapes, and the third possibility is for the school to purchase them from professional recording studies whenever they become available.

Program in Grades 8 and 9

It had been believed by those responsible for the Spanish-by-tape in grade seven that superior first- and second-year high-school Spanish classes would result from the following sequence:

7th grade Beginning Spanish by tape or audio broadcast assisted by classroom teachers who knew no Spanish

8th grade First-year high-school Spanish—regular Spanish teachers
Pupils selected on basis of seventh-grade success
Pupils to arrive at school an hour early for this program
Pupils to receive full high-school credit and permission to do regular second-year high-school work if a grade of 82 per cent is maintained throughout the first-year course

9th grade Second-year Spanish for those who had maintained an average of 82 per cent the previous year

It was believed that, although the pupils would be approximately one year younger than usual, such first- and second-year classes would be above average in accomplishment because there would be two years (grades 7

and 8) in which to absorb the difficult first year's work, and that giving a taste of a foreign language to all seventh-grade pupils would tend to weed out automatically those of inferior linguistic ability and to encourage many with genuine linguistic talent (who might otherwise never have been discovered) to continue the study of Spanish.

First-Year High-School Spanish

The *Experimental Group* consisted of 69 eighth-grade pupils (three classes) who had been recommended for this course by their last year's classroom teacher and the Spanish consultant. Ability to carry an extra subject, as well as linguistic ability, was the determining factor. All had studied Spanish-by-tape the previous year in the seventh grade.

The *Control Group* consisted of 82 ninth-grade pupils and above (three classes). All except those new to the district had studied Spanish-by-tape two years previously in the seventh grade.

At the end of the school year, a comparison between the two groups was made on the basis of individual percentile ratings on the *Cooperative Spanish Test,* Form 0, of the Education Testing Service. End-of-second-semester grades were awarded by their Spanish teachers.

An analysis of the *Cooperative Spanish Test* showed that 81 per cent of the 69 pupils in the Experimental Group fell in the 50th percentile or above, while only 44 per cent of the 82 pupils in the Control Group attained this achievement.

In the end-of-semester grades awarded by their Spanish teachers, 77 per cent of the 69 pupils in the Experimental Group received a 4 or above on an eight-point scale, while 64 per cent of the 82 pupils in the Control Group attained this record. No pupils in the Experimental Group received a grade of 7 or 8 (failing), while, in the Control Group, 10 pupils received a score of 7 (just passing) and one pupil received a score of 8 (failing).

Second-Year High-School Spanish

In second-year Spanish, separate teaching groups were not formed as in first-year Spanish. Instead, the Experimental Group (ninth-grade pupils) were mixed with the *Control Group* (tenth-grade pupils and above). Again both the Experimental Group and the Control Group had studied Spanish-by-tape in the seventh grade except for the pupils who were new to the district. The Experimental Group consisted entirely of pupils who had taken first-year high-school Spanish the previous year an hour early each morning in addition to their regular eighth-grade work.

An analysis of the *Cooperative Spanish Test* showed that the Experimental Group was slightly in the lead over the control Group in percentile ratings.

In end-of-semester grades awarded by their Spanish teachers, 91 per cent of the Experimental Group received grades of 4 or above, while 64 per cent of the Control Group received grades of 4 or above. Because of the apparent success of the above plan for Spanish, it is being continued this year.

Part IV

Looking Ahead

A sophomore geometry seminar discusses problems in geometry. Chairman Sharon Favaro leads the discussion. Most seminars at Ridgewood High School, Norridge, Illinois, contain 15 students.

Two Ridgewood students on individual study time in Industrial Arts assemble a battery eliminator.

CHAPTER XXVIII

A New High School Organizes for Quality Instruction

MELVIN P. HELLER
EUGENE R. HOWARD

IMAGES OF THE FUTURE is well on the road to becoming a reality of the present. Ridgewood High School, in the Chicago suburb of Norridge, Illinois, is a new $2,000,000 building which is organized, idealogically and mechanically, to implement the concepts of education described in the booklet, *Images of the Future*, by Dr. J. Lloyd Trump.

At present Ridgewood High School serves only 440 students in grades nine and ten. The school will expand to include grade eleven in 1961-62 and grade twelve in 1962-63. The school, designed to accommodate 1,000 pupils, contains special facilities for large-group instruction, small-group instruction, and individual study. The budgeted per pupil cost for 1960-61 is comparable to costs reported by other high schools in the area.

The pupils are divided according to ability into the top half and the bottom half of the freshman and sophomore years. A further refinement of the ability grouping is the identification of an accelerated and a remedial group for each year.

Ten individual study areas are now functioning: the foreign language, homemaking, and reading laboratories; the science and the humanities resource centers; the art rooms; the typing room; the music area; the mathematics study groups; and, of course, the library. As the number of the students participating in individual study at any one time is usually quite small, maximum opportunity can be provided for teacher-pupil conferences and individual project work.

Pupils spend, on the average, 35 per cent of their time in large-group instruction, 30 per cent in seminars and laboratories, and 35 per cent in individual study.

All pupils, regardless of ability, are provided with opportunities to participate in seminar discussions and also in individual study. Both of these follow-up activities are based on large-group lectures. This organization, made possible by a flexible pupil schedule, is in keeping with the objectives to which Ridgewood High School is dedicated—to emphasize the intellectual development of the pupil learning. It is too early to evaluate the outcomes of these objectives, but it is hoped that

Eugene R. Howard is Superintendent and Melvin P. Heller is Assistant Superintendent of the Ridgewood High School, Norridge, Illinois.

their realization will result in the self-direction of the pupils, made manifest by their ability to handle their social responsibilities.

In the interest of fostering these objectives, teams of teachers made extensive plans during a month-long summer workshop. The professional staff of twenty teachers, including four team chairmen, was divided into humanities and science-and-math divisions for the purpose of planning the curricular offerings. Not only did teachers emphasize a unified approach to subject matter for their own area, but also they expended much time and deliberation in an effort to cross subject matter lines wherever possible. The plans resulted in an enrichment program designed to make an integrated whole of the areas of knowledge.

The team teaching approach contributes to the professionalization of teaching by enabling each teacher to do those tasks for which he is best fitted. Teachers are given time to plan and much freedom from non-professional tasks.

Most teachers are scheduled for instructional activities with groups of students for only slightly more than half the time that school is in session. Most of the teachers' "professional activities" time is in blocks of one hundred minutes or more, allowing uninterrupted planning, study, and preparation time, as well as time which can be devoted to consulting with individual students.

Six instruction assistants, three clerical assistants, and three part-time general aides assist teachers with non-professional tasks such as paper correcting, cafeteria supervision, roll taking, typing and mimeographing, visual making, and record keeping.

The details necessary to initiate and to perpetuate this new plan for educating high-school youth have been very time consuming. In spite of some trying mechanical difficulties, the morale of the staff has been exceptionally high. In fact, visitors without exception have remarked about the staff's "mobilization of enthusiasm" which is so apparent and so vital to the success of the Ridgewood enterprise. It is sincerely hoped that this positive, high degree of morale will be justified when the results of the evaluation of the program are available.

CHAPTER XXIX

Brief History and Recommendations of the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School

J. Lloyd Trump

THE Commission was appointed by the Executive Committee of the National Association of Secondary-School Principals in May of 1956. The first meeting of the Commission opened on June 22, 1956. The final meeting of the Commission adjourned on November 11, 1960. This is a story briefly told of the four and one-half years that the Commission was in existence.

The Commission had its genesis in discussions held by the NASSP's Curriculum Planning and Development Committee in 1954 and in 1955. The following members constituted the sub-committee which spearheaded much of the work in setting up additional meeting: Dr. C. W. Sanford, then Associate Dean, College of Education, now, Dean of Admissions, University of Illinois; Dr. Will French, then Professor of Education, Teachers College, Columbia University; and Dr. Lloyd S. Michael, Principal, Evanston Township High School, Evanston, Illinois. Exploratory contacts by this group with representatives of the Fund for the Advancement of Education revealed the possibility of financial support by the Fund to enable the NASSP to sponsor experimental studies of staff utilization in secondary schools.

As a result of several meetings and conferences, it was possible to announce at the Chicago Convention of NASSP in February 1956 that a preliminary grant had been obtained from the Fund for the Advancement of Education. An invitation was extended to schools to submit proposals for experimental studies. Thus the project was launched and preliminary steps taken which led to the appointment of the Commission.

Eleven Meetings in Four and One-half Years

The minutes of the eleven Commission meetings typed single space fill 78 pages. They start with the organization of the Commission and its historical development and plan. They conclude with a look ahead to the future with a number of suggestions made for further consideration by NASSP's Curriculum Planning and Development Committee. In between these extremes is a record of a committee that was in no sense a rubber

J. Lloyd Trump is Associate Secretary, NASSP.

stamp group, but rather a working group which made many important decisions and considered carefully the reports of experimentation proposed, underway, and completed.

Much time in Commission meetings was spent in considering proposals for experimentation received from schools. Early the Commission developed a set of criteria which were used in the selection of experimental projects. Procedures for approving projects and evaluating the results were adopted and publicized. On some occasions, representatives from the schools appeared before the Commission. At other times, proposals were presented in writing supported by personal visits that had been made by the director or associate directors. Much time was spent by members of the Commission in reading progress reports from the schools and listening to oral reports by the director and associate directors of their visits to the places where experimental studies were in progress.

The question of evaluating the results of experiments was discussed at a number of meetings. At an early meeting, Dr. Ralph Tyler, Director of the Center for Advanced Study in Behavioral Sciences, Stanford, California, presented many suggestions for evaluating studies. On the basis of this discussion, some suggestions were sent to all of the schools participating in the studies. The Commission, however, decided against any central evaluation staff, but rather to rely on consultant help which the local schools participating in the studies could obtain from nearby higher institutions and from the state department of education staff in their state.

A study of the minutes reveals much concern by the Commission regarding relations with schools all over the country and with the Fund for the Advancement of Education. The Commission was anxious that all schools know about the project and have opportunity to participate. Many avenues of publicity were utilized. No special type of experimentation was advocated by the Fund for the Advancement of Education. Members of the Commission appreciated the fact that they have had as an invited guest at meetings, Dr. Lester Nelson, Program Associate of the Fund for the Advancement of Education. Dr. Nelson was for 21 years principal of the Scarsdale High School in New York prior to his accepting responsibilities with the Fund.

The membership of the Commission remained relatively constant during the period of its existence. The untimely death of Dr. Leo Barry of Newton, Massachusetts, soon after the second meeting of the Commission, brought one change in the membership as Mr. Herman Gruhn of Riverside, California, was appointed in his place. Since the president of the NASSP has also served as a member of the Commission, the members have had the counsel of five different persons serving in that position: George Cleland of Kansas, R. B. Norman of Texas, George Shattuck of Connecticut, Cliff Robinson of Oregon, and James Nancarrow of Pennsylvania.

The Commission deliberately maintained a very small staff. The only employees the first two years were the director, on five-sixth's time leave from the University of Illinois, and a half-time secretary. Robert Moore

was employed on a half-time basis the last two years and Lee Piggott on a half-time basis the final year of the Commission program. There was, therefore, a minimum of supervision from central staff. The locus of responsibility for experimentation was basically with the local schools.

The minutes also reveal much time spent by the Commission in overseeing finances, planning methods of disseminating the results of findings, and thinking through what the experimental results implied for future developments in the quality of education in secondary schools. Some of these activities and others are described in subsequent sections of this chapter.

The minutes imply, but do not reveal adequately, the large amount of time spent by Commission members in between meetings in reading and reacting to various statements submitted to them by the director and others, in writing articles and making speeches, and in doing many other tasks related to the staff utilization projects.

Purposes of the Commission

The purposes of the Commission were effectively stated in two articles in previous issues of The Bulletin:

"Why the Commission on the Experimental Study of the Utilization of the Staff in the Secondary School Was Created" by C. W. Sanford in the NASSP Bulletin, January 1958, pages 16-18.

"What Are We Trying To Accomplish in the Staff Utilization Studies?" by Lloyd S. Michael in the NASSP Bulletin, January 1959, pages 5-10.

Both of these foregoing articles emphasize the concern felt by many persons over what could happen to the quality of education in the face of an ever increasing shortage of well-qualified teachers. The quest for an answer to that problem led inevitably to the conclusion that steps needed to be taken to utilize more effectively the professional competences of the teachers that we did have and would be likely to obtain in the foreseeable future.

The Commission tried to stimulate experimental studies relating to staffing the schools, using electronic and other material aids, developing student responsibilities for learning, planning curriculum reorganization, and re-examining accrediting standards. The Commission intended to encourage widespread research so that schools all over the nation might re-examine practices in a systematic manner. No single type of research was advocated or insisted upon by the Commission. The statements also emphasized the purpose of the Commission to disseminate information and ideas in order to lead more and more schools into new approaches that might be studied and reported.

Experimental Projects

Nearly 100 junior and senior high schools, widely distributed throughout the United States, were involved in one way or another in the experimental studies sponsored by the Commission. The number of schools

was not determined in advance. The Commission would have been happy to have examined many more proposals than it received. Invitations continuously were given to schools to submit proposals.

Projects varied widely in what they attempted to study. This is the best evidence that the Commission did not set out to sponsor any one type of experimentation.

The studies have been reported annually in the NASSP BULLETIN. The January 1958, January 1959, and January 1960 issues, in addition to the present volume, were devoted entirely to reports about the studies and ideas which the studies suggested. These reports were written by the schools themselves. They are reasonably comprehensive in scope although much of the extensive data which schools collected was not included because of lack of space.

FINANCIAL SUPPORT

Financial support to make possible the activities of the Commission was provided during the first half of the Commission's life by the Fund for the Advancement of Education, an independent agency established by the Ford Foundation, and during the last half of the program directly by the Ford Foundation. The original grant, announced at the February 1956 Annual Convention of the NASSP in Chicago, was for $94,926.42. Total payments from the Fund for the Advancement of Education were $330,821.42 and from the Ford Foundation $700,000, making a total of $1,030,821.42 which the National Association of Secondary-School Principals received in grants to support and conduct experimental studies on staff utilization and to publicize the results.

The latest financial report of the Commission, dated October 31, 1960, at the time this article is being written shows the manner in which the funds granted to the NASSP have been expended by the Commission. The grants made by the Commission to schools to conduct experimental studies during the life of the Commission totaled $741,242.34. That represents approximately 72 per cent of the funds at the disposal of the Commission. The balance of the funds was spent for the following activities: salaries and expenses of the director and two associate directors; meetings of the Commission; NASSP administrative service, preparing, publishing, and distributing a large number of publications; clerical and office expense; convention programs; state association workshops; and the production of video tapes and films. Details of the financial report available at the NASSP office.

On October 31, 1960, there was a balance in the Commission account of $44,792.27. That amount will be used largely for preparing, printing, and distributing final reports on the projects.

PUBLICATIONS

In addition to this and three other complete issues of the NASSP BULLETIN, the Commission has produced three pamphlets and written a large number of articles in magazines and newspapers.

The first of three special publications by the Commission was entitled: *An Exciting Profession–New Horizons for Secondary-School Teachers.* This 36-page booklet, now out of print, was essentially a study guide which listed ten questions about staff utilization. More than 100 possible studies, presented under nine major headings, were listed in the pamphlet as a possible stimulus to school systems considering experimental approaches to staff utilization. The booklet provided suggestions for getting studies under way and for evaluating the results of experimentation. A total of 40,000 copies of this pamphlet written in 1957 were widely distributed.

The second publication, one which attracted world-wide attention, was *Images of the Future–A New Approach to the Secondary School.* This 46-page booklet drew upon the results suggested by staff utilization studies in order to describe what the secondary schools of the future might be like. Suggestions were given regarding the oranization of instruction, curriculum, and class schedules; the instructional staff; and many other aspects of educational programming. The proposals in the booklet were relatively specific in order to provide a basis for discussion by lay and professional groups. The booklet was first distributed at the February 1958 NASSP Convention in Philadelphia in conjunction with a dramatic program which presented, on the stage, demonstrations of television, video tape, overhead projection, sound tapes, and a number of other technological aids to instruction actually being used in Commission sponsored experimental studies in junior and senior high schools. Approximately 120,000 copies of *Images of the Future* have been distributed all over the world, mostly at the request of individuals writing for them. In spite of limitations placed on the number of copies that would be sent in response to requests, it has been necessary to have five printings of the publication.

The third and most recent publication is *New Directions to Quality Education–The Secondary School Tomorrow.* This 14-page booklet is in essence a guide to experimentation designed to accompany the Commissions' film, *And No Bells Ring.* Each page of the publication is divided into three parts: desirable directions for moving toward quality education; ways to accomplish those directions; and ways to evaluate the results of experimentation. Each page is concerned with some phase of the educational program such as needs of students, needs of teachers, flexible schedules, and team teaching. About 140,000 copies of this publication have been widely distributed.

Other Methods of Disseminating Results

The Commission has repeatedly stated its belief that students in secondary schools should not be limited to the printed page as a means of acquiring knowledge. Likewise, the Commission itself has not limited its efforts to disseminating ideas about its research suggestions to the use of the printed page. Members of the Commission, including the staff, have given addresses in nearly every state in the Union. Many of these

talks have utilized overhead projection and recordings as aids in communicating ideas. The Commission also partially paid the expense of workshops sponsored by state principals' associations in a number of states to use the technique of group discussion for exploring ideas and research findings. Numerous conferences have been held on the campuses of universities and under the sponsorship of state principals associations.

The Commission believed it should go not only beyond the printed page, but also beyond the spoken word, in disseminating ideas. This led to a unique convention program in 1959 in Philadelphia. In the 90-minute period, presented twice, the Commission reported on its experiments through demonstrations. A television studio was constructed on the stage. The audience observed *via* large screen television and on TV sets scattered throughout the large audience a TV class which they could also see in person on the stage. The lesson was recorded on video tape. It was the first time many of the persons in attendance had seen video tape in action. At the conclusion of the lesson, the teacher stepped back and observed his own teaching as it was reproduced immediately in sight and sound on the video tape recorder. As indicated previously, many other examples of the use of technology in education were also presented with live teachers and students.

One year later, the Commission produced a combination television program and film presentation. Two half-hour television programs were produced and recorded on video tape in the NBC Studios in Chicago. A professional TV performer, Hugh Downs, reported on Commission experiments. Teachers and students involved in the studies were presented in large-group instruction, small-group discussion, independent study, and in team teaching. Films were made from the video tape to show in local settings. The program was first presented at the NASSP Convention in February 1960 in Portland, Oregon. Since that time, the demand for the films has consistently exceeded their availability even though additional prints were obtained a number of times. The program has also been shown a number of times on television. More use of both the films and the video tapes on television is scheduled for 1961.

Next Steps

Early in 1960 the Commission recommended to the Executive Committee of the NASSP that a new Committee on Staff Utilization be appointed. The Commission also recommended to the Executive Committee that efforts be made to obtain a grant from the Fund for the Advancement of Education to support activities of the new Committee. These recommendations were based on a belief that, in view of the mounting interest in improved staff utilization, the NASSP should continue to provide services to schools seeking answers to staff utilization questions and desiring to learn more about what was being done. Both of these recommendations were accepted by the Executive Committee. The new Committe was appointed and a grant of $50,000 was obtained from the Fund for the Advancement of Education.

Much of the time at the last meeting of the Commission was devoted to a discussion of the nature of the final report. This report will be a paper-bound book approximately 150 pages in length to be published by Rand-McNally and Company. The publication date is set for March 31, 1961. The title will be concerned with the changing American high school. One copy of the book will be mailed without charge to all NASSP members. Additional copies will be available at less than $1.00 from the publisher. This book will provide more detailed suggestions for improving staff utilization in schools than have other publications of the Commission.

In concluding its period of service, the Commission is more dedicated than ever to the proposition that leadership in the improvement of secondary schools should come from local secondary-school principals and their staffs. The school of today will inevitably become the school of tomorrow. The only matter over which principals have control is whether the school of tomorrow will be better than the school of today. The Commission believes that fundamental responsibility for conducting research and trying new approaches should reside with school people themselves rather than with those outside the profession. But this will not happen unless school people take the leadership.

The role of the Commission has been to assist principals in conducting discussions and studies in their local communities. The Commission did not start with any preconceived notions about specific changes that needed to be made. As it concludes its period of service, the Commission still does not urge a standard blueprint for the secondary school of the future. It is convinced that basic changes are essential and that the nature of these changes presents a challenge to every secondary-school administrator in this country.

CHAPTER XXX

The NASSP Continues Its Services to Schools Interested in Improving Staff Utilization

J. Lloyd Trump

THE Executive Committee of the NASSP during its May 1960 meeting received and acted favorably on a recommendation from its four-year-old Commission on the Experimental Study of the Utilization of the Staff in the Secondary School. The Commission, two years earlier, had decided to complete its work officially on September 1, 1960. The recommendation was twofold in nature: (1) that a new Committee on Staff Utilization be appointed; and (2) that a grant of $50,000 to finance the committee be sought from the Fund for the Advancement of Education.

The Commission members pointed out in making the recommendation that widespread interest in better staff utilization in secondary schools had increased remarkably, especially since the publication of *Images of the Future* and *New Directions to Quality Education*, and the video-tape-film, *And No Bells Ring*. Inquiries from schools and requests from schools for assistance have greatly increased and seem destined to continue in an accelerated manner. These requests need to be fulfilled after the Commission ceases to exist.

The New Committee on Staff Utilization

A new Committee on Staff Utilization was appointed by the Executive Committee in order to set policies, receive reports, and evaluate the results of providing services to schools interested in staff utilization ideas. Here is the membership of the committee:

Lloyd S. Michael, *Principal*, Evanston Twp. High School, Evanston, Illinois, *Chairman*

John P. Deason, *Principal*, Columbus High School, Columbus, Georgia

John F. Erzinger, *Principal*, Nicholas Senn High School, Chicago, Illinois

Stephen Romine, *Dean*, School of Education, University of Colorado, Boulder, Colorado

William Jack Stone, *Principal*, O'Farrell Junior High School, San Diego, California

---

J. Lloyd Trump is Associate Secretary, NASSP.

EDWIN R. TILLAPAUGH, *Principal*, Downsville Central School, Downsville, New York

ELLSWORTH TOMPKINS, *Executive Secretary*, NASSP, *Ex Officio*
J. LLOYD TRUMP, Associate Secretary, NASSP, *Secretary*

FINANCIAL GRANT IS RECEIVED

The request of the NASSP Executive Committee to the Fund for the Advancement of Education for a grant of $50,000 to finance activities of the Committee on Staff Utilization was acted upon favorably by the Fund. Under the terms of the grant, NASSP was to employ three staff members, each on a part-time basis, to do the work of the committee. Each of the staff members was to be working on his doctorate at a University in the western, central, and eastern areas of the country respectively. The funds were to be used to pay salaries and travel expenses and to provide some clerical assistance for the staff members and to pay expenses for three committee meetings and other incidental expenditures. The grant was to cover a sixteen-months period from September 1, 1960 through December 31, 1961.

The purposes of the grant include providing consultant help to schools, explaining ideas through publications, films, and talks; conducting correspondence; contacting state principals' associations, state departments of education, and higher education institutions; and providing other appropriate services. It is assumed that the services of the staff may be augmented through partial or complete payment of travel costs of the staff by schools and other groups they serve.

STAFF ASSOCIATES ARE APPOINTED

Three staff members, all with previous teaching and administrative experience in secondary schools, and all working on doctorates in educational administration, have been employed by the NASSP on a half-time basis to facilitate the work of the committee. These staff members and their addresses follow:

PHILIP R. PITRUZZELLO, School Improvement Program, Department of Education, The University of Chicago, 5835 Kimbark Avenue, Chicago 37, Illinois

WILLIAM K. RAMSTAD, School Planning Laboratory, School of Education, Stanford University, Box 3104, Stanford, California

IRA J. SINGER, Department of Administration, School of Education, New York University, 51 Press Building, New York 3, New York

School systems or organizations interested in receiving assistance in thinking about or initiating staff utilization projects are invited to get in touch with the staff associate located nearest to them. Staff members also want to know about studies under way.

First Meeting of the Committee

Two major decisions were made by the Committee on Staff Utilization at the first meeting of the group. One of these grew from an interest in knowing the present degree of acceptance on the part of schools of staff utilization ideas. The other concerned ways through which the committee could be of most service to schools.

The committee decided to undertake a spot survey to discover the extent to which such matters as team teaching, varied class size, teacher assistants, and technical aids to instructions were now operating or being contemplated in schools. Each of the six members of the committee is making a survey in his own state or nearby state. The results of this inquiry will be presented at the 1961 Annual Convention of the NASSP in Detroit.

The second decision of the committee was to recommend the appointment of state committees on staff utilization. These state committees, like the national committee, would serve to conduct surveys and provide information to interested persons and groups.

Purpose of the Committee

The Committee on Staff Utilization has no blueprint for changes in the organization of secondary education. Like the National Association of Secondary-School Principals of which it is a part, the committee has no common point of view to promote a single pattern of instruction. It does believe that secondary-school principals should assume leadership in studying school operations to see if what is being done is the best that can be done.

The Book Column

Professional Books

Addresses and Proceeding of the Ninety-Eighth Annual Meeting. Washington 6, D. C.: National Education Association, 1201 Sixteenth Street, N. W. 1960. 496 pp. Contains the twelve addresses given before the Representative Assembly, the minutes of business meetings, reports from the NEA departments including the National Association of Secondary-School Principals, annual reports, the officers, headquarters staff, a list of the delegates to the Representative Assembly, *etc.*

ANASTAI, ANNE; M. J. Meade; and A. A. Schneiders. *A Biographical Inventory.* Princeton, N. J.: College Entrance Examination Board, c/o Educational Testing Service, Box 592 (or Box 27896 Los Angeles 27, California). 1960. 87 pp. $2. The report contained in this volume constitutes Part I of a three-part project report on "The Validation of a Biographical Inventory as a Predictor of College Success." This part of the report, dealing with the development and validation of a scoring key for the Biographical Inventory, covers the major quantitative analyses of the data. Part II is concerned with sociometric and interview data gathered on the criterion cases and with the role of contingency factors in college success. Part III is an intensive study of discordant cases. The duration of the entire project was from June 1956 to June 1960. The principal object of the project described was to determine the validity of a biographical inventory in predicting college success, with special emphasis on the nonintellectual criteria of such success.

BEREDAY, G. Z. F., W. W. BRICKMAN, and G. H. READ. *The Changing Soviet School.* Boston: Houghton Mifflin Company, 2 Park Street. 1960. 532 pp. $3.50. The present book engages in some exploration of the primary and secondary materials on Soviet Education. The core of the book, however, and its claim to strength, is the record of the observations made by some seventy American educators who spent one month in the Soviet Union in August and September of 1958. Half of their time was spent in conferences with educational officials in Moscow, Leningrad, Kiev, and Tashkent. The other half was used to visit the schools. The recorded notes of the participants were absorbed into the main part of this book. These eyewitness accounts, in spite of their obvious limitations, should add to the store of information about the Soviet system and complement the few existing studies based on research in published Soviet sources.

The emphasis of this book is on the *changing* Soviet school. The newly enacted reforms in Soviet education bear witness to the interdependence of the Soviet school and the evolving Soviet society. Part One is a summary of the philosophical, social, and historical antecedents of the present-day school; Part Two describes the Soviet school in its formal organization; and Part Three surveys selected issues in Soviet education.

————, and J. A. LAUWERYS. *Communication Media and the School.* New York: World Book Co., Tarrytown-on-Hudson. 1960. 606 pp. $8.50. In this symposium, the eighth in the series of international Yearbooks pub-

lished under the auspices of Teachers College, Columbia University, and the University of London Institute of Education, authorities from many nations discuss the history and present status of mass communication—in its divers simple and complex forms—and its effect on established educational methods and learning techniques. The contributing authors include not only educators, but also technical experts, psychologists, producers, and research specialists in the broad field of instruction we generally classify as "audio-visual."

Following the editors' introduction, which traces the history of communication from cave paintings to the teaching machine, *Section I* considers the theoretical and social implications of the new media and the massive democratization of learning brought about by their use. The role of experience in learning is discussed by several contributors, and discrimination is urged in the use of the new aids to teaching. Important passages here deal with the ethical and socio-economic problems involved and with the impact of the new mechanical aids on teaching and textbooks. Chapter 6, "The Effect of Television on Textbooks," reports at some length on the 1959 Management Conference of the American Textbook Publishers' Institute, and on the contribution of the Federal Government under Title VII of the National Defense Education Act. *Section II* deals with developments in the services provided by museums and libraries, and with specific inventions or experiments in the use of the new media. These include articles on the tape recorder, the syncro-reader, closed circuit television, research findings in the U.S.A., and the typography of children's books.

The Area Studies in *Section III* (by far the longest) give a representative picture of the organization and use of new media in schools throughout the world. Areas discussed, in addition to the United States and the United Kingdom, include Australia, Denmark, France, Germany, Ghana, India, Italy, Japan, Poland, Sweden, and the U.S.S.R. *Section IV* offers a number of case studies to illustrate in more detail the issues previously raised and the policies adopted in selected areas or countries. Two leading reports on the U.S.A. are concerned with a comparison of closed and open-circuit television for college courses and with language laboratories in foreign-language teaching. Some countries not represented in the previous section are Canada, Colombia, East Africa, Iran, and New Zealand. The final chapter examines various uses of the new media in promoting international understanding—through agencies such as UNESCO and international exchanges of film and radio scripts.

BRUNER, J. S. *The Process of Education*. Cambridge 38, Massachusetts: Harvard University Press. 1960. 117 pp. $2.75. "What shall we teach and to what end?" A noted psychologist discusses this fundamental question in the light of pioneering experiments in teaching that have been taking place across the nation for the past five years. The author concludes, on the basis of convincing evidence, that the basic concepts of science and the humanities can be grasped by children far earlier than has ever been thought possible. The task is to present the fundamental structure of the material to be learned in a form that can first be apprehended intuitively by the child, and then later, through instruction, to build upon this intuitive understanding. The important ideas of "structure" and "intuition," and their relation to intellectual development, are examined not only from a psychological point of view, but also from the practical standpoint of putting together and teaching a school curriculum.

BURTON, D. L. *Literature Study in the High Schools.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 196 pp. In this text Professor Burton not only displays an unusual grasp of the whole field of literature for young people, but also offers a valuable guide to discriminating readers as a bridge to the mature world of literature. Without adhering to any one school of thought, the author offers many practical teaching suggestions which have been pre-tested in the classroom, an indispensable "Aids to the Teacher of Literature," and a detailed discussion of many specific books and authors. Beginning the reading program with the student's own interests and experience, Professor Burton indicates the gradual process by which his perception and awareness are developed into a mature literary taste. This book presents a critical examination of the major categories of imaginative literature for the adolescent audience and also discusses methods and curricula in literature for the junior and senior high school.

BURTON, W. H., R. B. KIMBALL, and R. L. Wing. *Education for Effective Thinking.* New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1960. 523 pp. $6. One basic reason why better results are not achieved is that the majority of teachers have no knowledge of the thinking process and its development. No carping or supercilious criticism of teachers is intended. The fault lies squarely with the teacher-training institutions, complicated by public indifference to the problem. General ignorance of the intricacies of thinking is the rule with the average citizen, the man-in-the-street. This volume is addressed to the problem of developing understanding of thinking, to teaching so that transfer of processes may take place. The first three chapters, Part I, contain descriptions of the chief characteristic of reflective critical thinking. Part II is composed of nine chapters about the thinking process. Part III (nine chapters) deals with the teaching process and learning to think. An appendix includes question for discussion, term paper topics, sample unit outlines, principles of sound thinking, and a general bibliography.

CLOWARD, R. A., and L. E. OHLIN. *Delinquency and Opportunity* Chicago 1: The Free Press of Glencoe, Illinois. 1960. 232 pp. $4. How do delinquent gangs arise, recruit members, develop different law-violating ways of life, and persist or change? The three general types of delinquent gangs—street warriors, drug addicts, and apprentice criminals—offer not only very different styles of life for their members, but also very different problems for social control and prevention. The authors clearly argue that major changes in the existing social setting of delinquency will have to be made before elimination or even control of the problem can be considered. Should the pressures within society which produce delinquent behavior remain the same, we cannot hope to stem the trend toward violence and retreatism among adolescents in urban areas.

Conference Proceeding of the 1960 White House Conference on Children and Youth. Washington 6, D. C.: National Committee on Children and Youth, Suite 412, 1145-19th Street, N. W. 1960. 438 pp. $2.25. Presents the entire Conference story, from President Eisenhower's call to action in 1958 to the final recommendation. Included are the history and organization of the Conference, the program, the Conference sessions including the addresses and the 18 forum speeches and the summary of each forum's recommendations, the composite report of forum recommendations (670 in number), the organization chart, committee personnel, a list of financial contributors, *etc.*

lished under the auspices of Teachers College, Columbia University, and the University of London Institute of Education, authorities from many nations discuss the history and present status of mass communication—in its divers simple and complex forms—and its effect on established educational methods and learning techniques. The contributing authors include not only educators, but also technical experts, psychologists, producers, and research specialists in the broad field of instruction we generally classify as "audio-visual."

Following the editors' introduction, which traces the history of communication from cave paintings to the teaching machine, *Section I* considers the theoretical and social implications of the new media and the massive democratization of learning brought about by their use. The role of experience in learning is discussed by several contributors, and discrimination is urged in the use of the new aids to teaching. Important passages here deal with the ethical and socio-economic problems involved and with the impact of the new mechanical aids on teaching and textbooks. Chapter 6, "The Effect of Television on Textbooks," reports at some length on the 1959 Management Conference of the American Textbook Publishers' Institute, and on the contribution of the Federal Government under Title VII of the National Defense Education Act. *Section II* deals with developments in the services provided by museums and libraries, and with specific inventions or experiments in the use of the new media. These include articles on the tape recorder, the syncro-reader, closed circuit television, research findings in the U.S.A., and the typography of children's books.

The Area Studies in *Section III* (by far the longest) give a representative picture of the organization and use of new media in schools throughout the world. Areas discussed, in addition to the United States and the United Kingdom, include Australia, Denmark, France, Germany, Ghana, India, Italy, Japan, Poland, Sweden, and the U.S.S.R. *Section IV* offers a number of case studies to illustrate in more detail the issues previously raised and the policies adopted in selected areas or countries. Two leading reports on the U.S.A. are concerned with a comparison of closed and open-circuit television for college courses and with language laboratories in foreign-language teaching. Some countries not represented in the previous section are Canada, Colombia, East Africa, Iran, and New Zealand. The final chapter examines various uses of the new media in promoting international understanding—through agencies such as UNESCO and international exchanges of film and radio scripts.

BRUNER, J. S. *The Process of Education*. Cambridge 38, Massachusetts: Harvard University Press. 1960. 117 pp. $2.75. "What shall we teach and to what end?" A noted psychologist discusses this fundamental question in the light of pioneering experiments in teaching that have been taking place across the nation for the past five years. The author concludes, on the basis of convincing evidence, that the basic concepts of science and the humanities can be grasped by children far earlier than has ever been thought possible. The task is to present the fundamental structure of the material to be learned in a form that can first be apprehended intuitively by the child, and then later, through instruction, to build upon this intuitive understanding. The important ideas of "structure" and "intuition," and their relation to intellectual development, are examined not only from a psychological point of view, but also from the practical standpoint of putting together and teaching a school curriculum.

BURTON, D. L. *Literature Study in the High Schools.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 196 pp. In this text Professor Burton not only displays an unusual grasp of the whole field of literature for young people, but also offers a valuable guide to discriminating readers as a bridge to the mature world of literature. Without adhering to any one school of thought, the author offers many practical teaching suggestions which have been pre-tested in the classroom, an indispensable "Aids to the Teacher of Literature," and a detailed discussion of many specific books and authors. Beginning the reading program with the student's own interests and experience, Professor Burton indicates the gradual process by which his perception and awareness are developed into a mature literary taste. This book presents a critical examination of the major categories of imaginative literature for the adolescent audience and also discusses methods and curricula in literature for the junior and senior high school.

BURTON, W. H., R. B. KIMBALL, and R. L. Wing. *Education for Effective Thinking.* New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1960. 523 pp. $6. One basic reason why better results are not achieved is that the majority of teachers have no knowledge of the thinking process and its development. No carping or supercilious criticism of teachers is intended. The fault lies squarely with the teacher-training institutions, complicated by public indifference to the problem. General ignorance of the intricacies of thinking is the rule with the average citizen, the man-in-the-street. This volume is addressed to the problem of developing understanding of thinking, to teaching so that transfer of processes may take place. The first three chapters, Part I, contain descriptions of the chief characteristic of reflective critical thinking. Part II is composed of nine chapters about the thinking process. Part III (nine chapters) deals with the teaching process and learning to think. An appendix includes question for discussion, term paper topics, sample unit outlines, principles of sound thinking, and a general bibliography.

CLOWARD, R. A., and L. E. OHLIN. *Delinquency and Opportunity* Chicago 1: The Free Press of Glencoe, Illinois. 1960. 232 pp. $4. How do delinquent gangs arise, recruit members, develop different law-violating ways of life, and persist or change? The three general types of delinquent gangs—street warriors, drug addicts, and apprentice criminals—offer not only very different styles of life for their members, but also very different problems for social control and prevention. The authors clearly argue that major changes in the existing social setting of delinquency will have to be made before elimination or even control of the problem can be considered. Should the pressures within society which produce delinquent behavior remain the same, we cannot hope to stem the trend toward violence and retreatism among adolescents in urban areas.

Conference Proceeding of the 1960 White House Conference on Children and Youth. Washington 6, D. C.: National Committee on Children and Youth, Suite 412, 1145-19th Street, N. W. 1960. 438 pp. $2.25. Presents the entire Conference story, from President Eisenhower's call to action in 1958 to the final recommendation. Included are the history and organization of the Conference, the program, the Conference sessions including the addresses and the 18 forum speeches and the summary of each forum's recommendations, the composite report of forum recommendations (670 in number), the organization chart, committee personnel, a list of financial contributors, *etc.*

CULBERTSON, JACK, PAUL JACOBSON, and THEODORE RELLER. *Administrative Relationships: A Casebook*. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1960. 532 pp. $6.75. This book presents a comprehensive study of the nature of the administrative process and the role of the educational leader. It is divided into three sections that serve a variety of approaches for educators who wish to emphasize a particular teaching method. Section I, *Method*, presents the aspects of case analysis, preparation of cases, and case method teaching. This section gives helpful suggestions and discusses the issues in case preparation. The material is particularly useful for students who wish to prepare and discuss their own cases.

Section II, *Cases*, contains seventeen cases which describe administrators grappling with real problems. The cases have been tested with various student groups and have been selected on the basis of interest, variety, and potential for developing an understanding about administration.

Section III, *Concepts*, relates to the current search for more adequate theory of administration. Concepts and bibliographical resources have been included as aids in exploring underlying theoretical issues.

This casebook provides specific examples for analyzing a particular case. Four analyses of the same case are included by professors of different social science backgrounds. It focuses attention on "administrative behavior," indicating that the book has been influenced by this and other new developments in the study of administration, classifies the various cases in relationship to different aspects of administration.

DOMS, KEITH, and HOWARD ROVELSTAD, editors. *Guidelines for Library Planners*. Chicago 11: American Library Association, 50 East Huron Street. 1960. 128 pp. $3.75. This is an authoritative work on library planning and construction, based on the proceedings of the Library Buildings and Equipment Section of the American Library Association. The report is a practical guide to planning and equipping libraries. It also provides architectural background and the philosophy of design which should be an integral part of any library building. Experts from the field of achitecture, library consulting, and researching discuss how to get the most from a building in regard to layout, interiors, flooring, equipment, specifications, lighting, heating, and ventilation. A part of the book is devoted to critiques of specific buildings at the college, university, and public school levels.

Provisions for parking, use of consultants, flow, modular construction, use of panel walls, air locks, resilient floorings, future expansion, and the psychological value of certain types of office and library furnishings are some of the innovations discussed by the experts.

GORDON, E. J., and E. S. HOYES. *Essays on the Teaching of English*. New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1960. 366 pp. $4.50. This is a book for the high-school teacher of English. In it, good teachers try to say in concrete language how they have handled problems relevant to any English classroom in the teaching of language, writing, and literature. As they do, the central motif of the book emerges—the problem of thinking; from this all else grows.

The essays offered here are drawn from reports of four of the annual Yale Conferences on the Teaching of English, financed by the Yale Master of Arts in Teaching Program as a part of its inservice training. These meetings began in 1955 to bring together teachers of English—mainly from secondary schools,

but always with higher education represented—to consider topics of special importance in the classroom.

For each Conference, working committees of outstanding teachers were assembled, meeting at intervals during the year. Their discussion of a particular topic culminated in a report to which all had contributed from their experiences and which was then disseminated at the Conference, first by being read by the committee chairman and discussed from the floor, and second by being included in a Conference Report distributed to all in attendance. Included also were talks by distinguished university teachers on topics central to a given Conference. The Reports have usually been taken home by those in attendance to be shared with other members of the department of English. From them the present selection has been made in the hope, shared by the National Council of Teachers of English, that it will prove useful to an even wider audience.

Questions with which the committees were asked to grapple were such as these: What kind of language teaching should be going on in the secondary school? What is grammar? How should it be taught? How should new ideas on linguistics influence the traditional teaching of grammar?

To make their reports more useful, each committee offered in an appendix to its report bibliographies, classroom exercises, and, sometimes, accounts of their ways in which students had reacted to the exercises. These documents, slightly modified, are included in the present volume.

HARCLEROAD, F. F., editor. *The Education of the AV Communication Specialist*. Washington 6, D. C.: Department of Audiovisual Instruction, 1201 Sixteenth Street, N. W. 1960. 96 pp. $2. This is the proceedings of the DAVI Seminar in Cincinnati, March 2-4, 1960. Sections I and VI contain Dr. Harcleroad's personal commentary. Sections II, III, IV, and V include the prepared papers together with selected quotations from the seminar discussions. In its entirety, the report represents a start toward defining a body of intellectual content for the education of the audiovisual communication specialist.

HENRY, N. B., editor. *Rethinking Science Education*. Chicago 37: University of Chicago Press, 5750 Ellis Avenue. 1960. 368 pp. cloth bound, $4.50; paper bound, $3.75. This is Part I of the Fifty-ninth Yearbook of the National Society for the Study of Education. The book will be recognized as the painstaking endeavor of dedicated scientists to forecast the oncoming objectives of science education. As was to be expected, the various pronouncements of the text of this volume afford dependable guidance in the interpretation of significant trends in science instruction at present stages of progress in the development of new knowledge in the various fields of science. Thus, the pronouncement that "there are two major aspects of science education; one is knowledge, the other is enterprise." The cultural significance of these simple facts is epitomized in the discerning appeal of the following paragraph: "Through the practical applications of scientific discovery, our civilization is undergoing constant change. In turn, these changes bring about situations which threaten the well-being of future generations. The welfare of our civilization is now almost wholly dependent upon scientific progress. Society must respond with adequate and intelligent control."

The titles of the 18 chapters which compose the book are: The Role of Science in Our Culture; Science Education for Changing Times; How the

Individual Learns Science; Creativity and Personality in the Scientist; The Status of Science-Teaching in Elementary and Secondary Schools; Science for General Education in the Colleges; Developing Science Programs in the Elementary School; Teaching and Evaluating Science in the Elementary School; Improving Secondary-School Science; Auxiliary Efforts to improve the Secondary-School Science Efforts; Organization and Administration for Curriculum Development in Science; The Supervision of the Science Program; Facilities, Equipment, and Instructional Materials for the Science Program; The Education of the Science Teacher; The Professional Growth of the Science Teacher; Needed Research in Science Education; Implications for College and University Programs; and Problems and Issues in Science Education.

HOCK, L. E. and T. J. HILL. *The General Education Class in the Secondary School.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 250 pp. $4. The general education class in secondary education is one of the exciting developments of twentieth-century education. As described by the authors, the core of the curriculum is much more than a methodological device. The general education class is an approach to vital content growing out of the social realities of our times, our democratic values, modern psychological theory, and what we know of the adolescent and his needs. The purpose is no less than "the maximum development of each young person as an intelligent individual in his own right and as a mature citizen in his relationship with his fellow man."

INGRAM, C. P. *Education of the Slow-Learning Child.* New York 10: The Ronald Press Company, 15 East 26th Street. 1960. 390 pp. $5.50. This book presents the educational programs designed to discover and develop the assets of a wide range of mentally retarded or slow-learning children. It begins with an examination of the needs and potentialities of the mentally retarded and the problems that teachers, parents, and interested members of the community face in providing programs of special education for these particular children. It then discusses in detail the methods and techniques of meeting these problems. Throughout, the focus is on understanding and aiding the retarded child to grow and develop in a wholesome educational environment.

Primarily this volume has been prepared for special education teachers and administrators. It can also serve as a guide for the general school administrator, psychologist, and social worker who face the problems of the mentally retarded. It is a practical reference for elementary-and secondary-school teachers who must provide optimal learning situations for the slow-learning child in the regular classroom. Moreover, it offers informative source material to parents, agency and institutional workers, and civic leaders concerned with the adjustment of the retarded.

International Yearbook of Education, Vol. 21. New York 27: Columbia University Press, 2960 Broadway (UNESCO). 1959. 550 pp. $5.50. This book contains repoits of 77 countries on educational progress in 1958-59. Discussed are administration, free compulsory education, primary education, secondary education, vocational education, higher education, and teaching staff in each of these 77 countries. The aim of this comparative study is, in short, to determine trends toward a rise, a fall, or stability in the main educational trends. In order to do this we must, for the time being, content ourselves with facts which, even if they are not absolutely exact, at least give an idea of relative magnitude.

JONES, J. J. and I. W. STOUT. *School Public Relations: Issues and Cases.* New York 16: G. P. Putnam's Sons, 210 Madison Avenue. 1960. 207 pp. $3.75. This book treats some of the most common issues in American education which affect school public relations. Sixty carefully chosen cases are offered as a way of bringing thirty specific issues to the attention of those interested in good school public relations. Administrators, supervisors, teachers, and prospective teachers will find the cases presented and the methodology for attacking each problem of particular value. School-board members and members of parent-teacher associations will find the book helpful in their consideration of school policies and practices. The issues treated are specific and representative. Cases are treated under the broad categories of school boards, finance, budget preparation and control, school plant, personnel administration, curriculum, instruction, and community groups.

MAGARY, J. F., and J. R. EICHORN. *The Exceptional Child.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 575 pp. $5.50. Essential material in each area of the rapidly developing field of special education is brought together in this book of 71 readings, each by an acknowledged expert. Representing the best thinking of the past decade, these articles consider those children who can benefit from special services or a special curriculum in their daily school routine. Concentration is on the child, rather than on his particular handicap. Brief editorial commentaries point up the significance of each article.

MAYHEW, L. B., editor. *General Education.* New York 16: Harper and Brothers, 49 East 33rd Street. 1960. 222 pp. $4. Based on firsthand experience and knowledge, this book treats the growing movement toward general education in many colleges today: the basic philosophy of general education, its successful adaptation and practice in many institutions, its weaknesses, and its future.

The eight contributors, who are among the outstanding pioneers in general education, discuss administrative practices in general education programs, curricular programs, the quality of teaching and the faculty, and methods of evaluation and research. Together they provide a balanced guide for college faculties who are considering the establishment of a program of general education and research or the improvement of an existing one. Students of higher education will find this book valuable for its wealth of background material as well as for its balanced view of both achievements and failures in general education programs.

MORSE, A. D. *Schools of Tomorrow—Today.* Garden City: Doubleday and Company. 1960. 191 pp. This book reports on major experiments in education that are now being made in the schools of our nation. Included are reports on team teaching in the Franklin School in Lexington, Massachusetts; schools without grades in Appleton, Wisconsin; the search for hidden talent in New York City schools; the use of teacher aides in Bay City, Michigan; TV teaching in Washington County, Maryland; experiments in excellence in Evanston (Illinois) Township High School; The Catskill (New York) project in rural schools; TV in Southwestern Indiana schools; and the Harvard University program to stimulate outstanding liberal arts graduates to enter the teaching profession.

MUSSEN, P. H., editor. *Handbook of Research Methods in Child Development.* New York 16: John Wiley and Sons, Inc., 440 Park Avenue South. 1960. 1071 pp. $15.25. This is the only book on child development designed

to give a broad coverage of research methodology. It is not a substantive textbook. Research work and findings are often cited and explained, but these are used only to illustrate research methods.

The first part of the book is concerned with general research design and the use of observation and experimental methods in research. This is followed by three chapters on the study of biological growth and development. The next six chapters are concerned with the cognitive processes (perception, learning, language, *etc.*). Part IV deals with the major research tools and areas of study in the field of personality development, and the final section covers the study of the child's social behavior and environment. Each chapter is written by an outstanding authority in the field of child development.

NEILL, A. S. *Summerhill: A Radical Approach to Child Rearing.* New York 11: Hart Publishing Company, 74 Fifth Avenue. 1960. 416 pp. $5.75. Summerhill is perhaps the most unusual school in the world. Here's a place where children are not compelled to go to class—they can stay away from lessons for years, if they want to. Yet, strangely enough, the boys and girls in this school LEARN! In fact, being deprived of lessons turns out to be a severe punishment.

Summerhill has been run by the author for almost forty years. This is the world's greatest experiment in bestowing unstinted love and approval on children. This is the place where one courageous man, backed by courageous parents, has had the fortitude to actually apply—without reservation—the principles of freedom and nonrepression. In this book, the author candidly expresses his unique—*and radical*—opinions on the important aspects of parenthood and child rearing.

NELSON, B. H., editor. *The Dynamics of Instructional Groups.* Chicago 37: University of Chicago Press, 5750 Ellis Avenue. 1960. 314 pp. cloth bound, $4.50; paper bound, $3.75. The yearbook committee of Part II chose to confine its effort (a) to providing an exposition of the sociopsychological knowledge about human groups which is relevant to the operation of instructional groups, and (b) to developing the connections between this knowledge and the pressing problems of instructional practice. The committee has organized the yearbook in such a way as to reflect the different phases of practitioner behavior. This meant, first, that knowledge basic to skillful and effective diagnoses and action with instructional groups must be one of the central themes of organization. Secondly, principles of diagnosis and instructional action must be presented so as to show the connections between the exposition of relevant sociopsychological knowledge and the problems of educational practice; this became the second central theme of organization. Section II of the yearbook represents the effort to develop the first-mentioned central theme of organization. Section III represents the authors' attempt to document the second central theme of organization.

In Chapter I, Gale Jensen presents points in the committee's discussion relative to coverage. In Chapter II, Max Goodson provides a description of the reciprocal influences between American culture and American education and then attempts to define the cultural conditions which give rise to the controversy pertaining to the "individual" and the "group" in American life. In Chapter III, William Trow analyzes the role functions of the teacher in instructional groups. He identifies four concepts which he believes to be basic to an understanding of teaching behavior and then proceeds with a description of the different kinds of functions inherent in the major types of roles filled by

teachers; *viz.*, the instructional role, the administrative-executive role, and the extraclass role of the faculty member of a school system. Chapter IV presents a discussion by Jacob Getzels and Herbert Thelen on the unique aspects of the classroom as a human group. The unique characteristics of these groups are formulated in terms of classroom participants, leadership, relationships between the classroom group and other groups, and classroom freedom and its protection. Chapter V by Gale Jensen analyzes the social structure of instructional groups. Jack Gibb presents in Chapter VI, an account of the sociopsychological processes of instructional groups. He first develops the meaning of sociopsychological process and then identifies the need for a frame of reference within which to observe the sociopsychological processes of instructional groups. He then proceeds to analyze these processes in terms of such concepts as the development of classroom norms, the interdependence of group members, group climate, the group communication system, goal behavior, group organization for the attainment of goals, and the acquisition of group membership by students composing an instructional group. In Chapter VII, Jay Jackson treats little-understood but extremely significant group phenomena which are designated as group norms. His introductory section is concerned with the meaning and importance of the concept of "norm" as it applies to individual behavior and group action. Following this he analyzes the structural characteristics of norms and then provides an exposition concerning the development and change of norms. His exposition, also, includes an identification of some critical areas of norm formation in instructional groups and some observations of the effects of group norms on the behavior of group members. David Jenkins' analysis of the characteristics and functions of leadership, Chapter VIII, examines the teacher as a leader in instructional groups. Ned Flanders, in Chapter IX, introduces the yearbook's concern with the practical diagnosis and control of sociopsychological phenomena in instructional groups. In Chapter X, Murray Horwitz presents a vital study of diagnosis and guidance of the sociopsychological processes at work in instructional groups. The diagnosis and guidance of relationships between the group and individual class members is dealt with by William Morse in Chapter XI. In Chapter XII, C. F. Lehmann studies the problem of analyzing and managing the physical setting as it affects the sociopsychological formation and operation of instructional groups. The summary chapter by Willard C. Olson point up the implications of sociopsychological knowledge and technology for teachers. This volume also includes a directory of members.

New Directions in Financing Public Schools. Washington 6, D. C.: Committee on Educational Finance, National Education Association, 1201 Sixteenth Street, N. W. 1960. 143 pp. $1. Each year the problems of financing public education in the United States become more difficult and complex. Part of the difficulty lies in the current rate of growth of education as a public enterprise, growth that is straining severely the traditional sources of financial support. In all probability, the problems will become more acute in the years ahead.

In such times, exchange of ideas among persons responsible for school finance and a group attack on the most important problems are imperative if public education is to continue to meet the needs of an expanding economy and an increasing population. To this end, the NEA Committee on Educational Finance has sponsored a series of annual national conferences. The third of these conferences was held in St. Louis, Missouri, April 21-22, 1960.

The 1960 Conference focused attention on the long-range impact of current problems. To give the Conference participants a running start in thinking about specific aspects of these problems, papers were prepared by experts in school finance and economics. These papers formed the bases for general sessions and small group discussions. To make available to all interested persons the stimulating, informative, and practical material presented in these papers, this Conference report was published.

OVSIEW, LEON, and W. B. CASTETTER. *Budgeting for Better Schools.* Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1960. 354 pp. $7.95. The purpose of this book is to help educational planners to deal realistically with the demands which an expanding population place upon contemporary education. It underlines the importance of the budget and the budgetary process in improving the quality of education provided in local school systems. School administrators, board members, and others interested in educational administration will find this book a comprehensive guide to several different types of school budgets. It discusses the budget-making process in detail and describes the many ways that a well-designed school budget can be used; for example, as an instrument for educational planning, evaluation, and financial control.

POOLEY, R. C., editor. *Perspectives on English—Essays to Honor W. Wilbur Hatfield.* New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1960. 336 pp. $4. The editor writes a tribute to Mr. Hatfield in recognition of his tremendous service to the National Council of Teachers of English. Then follow 20 essays written in response to an invitation by the editor. Each contributor chose his own subject and developed it as he wished. The titles and authors of the essays are: *Prologue: Common Bond* by Ruth Mary Weeks; *Let Them All Read* by Helen K. Mackintosh; *The Teaching of Literature in Secondary Schools* by Marion C. Sheridan; *Shall They Inherit the Realms of Gold?* by Thomas Clark Pollock; *Teaching the Introductory College Course in Literature* by John C. Gerber; *Cultivating Literary Audiences* by Lennox Grey; *Teaching the Art of Listening* by Harold A. Anderson; *Speak the Speech!* by Harlen M. Adams; *Freshman Composition and the Tradition of Rhetoric* by Porter G. Perrin; *Linguistic Science and the Teaching of English* by Charles C. Fries; *Developing a Love of Good Reading* by Dora V. Smith; *On Reading Literature* by Paul Farmer; *The Concept of Creativity in Reading* by John J. DeBoer; *The Hazards of Semi-literacy* by Stella S. Center; *The Search for Standards* by Luella B. Cook; *Custom Serves for Reason* by Mark A. Neville; *The Teaching of Literature in American High Schools, 1865-1900* by Joseph Mersand; *The Continuing Education of the Teacher of English* by Helene W. Hartley; *The Pedant and Some Other Characters in His Profession* by Brice Harris; and *Epilogue: The English Teacher* by Lou La Brant.

Preparation of General Secondary School Curricula, No. 216. New York 27: Columbia University Press, 2960 Broadway (UNESCO). 1960. 330 pp. $4. This book describes the education program of 71 countries of the world, and provides a table of statistics on each. It also compares education through the following chapters: Structure of Secondary Education; Aims of Secondary Education; Compulsory or Non-compulsory Character of Syllabuses, Detailed Syllabuses or Otherwise, Freedom of Interpretation; Differentiation of Syllabuses; Authorities Responsible for the Preparation and Revision of Syllabuses; Composition of the Agencies Responsible for Drafting Revision; Issuing of Syllabuses; Connection Between Primary and Secondary Syllabuses; Influence

of Higher Education; Coordination Between the Different Subjects; Influence of Educational and Vocational Guidance; Reprecussions of the Increase in the School Population; Prior Testing of Syllabuses; Experimental Schools; Institutions of Educational Research; Relative Importance of the Different Subjects in General Secondary Education.

Public Education in Nevada—A Further Look. Laramie, Wyoming: The University of Wyoming. 1960. 125 p. $1.50. This is a report of a survey committee appointed by the Governor following authorization by the 1959 state legislature. The survey was conducted by the University of Wyoming. In appraising Nevada's schools, the survey team utilized the following procedures: (1) visited every county school system including every attendance center with the exception of a few isolated rural schools; (2) observed educational environment, practices, and facilities; (3) conferred with administrators, teachers, pupils, and citizens; (4) collected materials pertaining to daily programs, course offerings, operational procedures, reports of studies, budget documents, annual reports, *etc.*; and (5) analyzed questionnaires and opinionnaires filled out by teachers administrators, pupils, and citizens.

ROBISON, S. M. *Juvenile Delinquency.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 560 pp. The book offers a thorough analysis of theories seeking to explain juvenile delinquency and of the research data that test them. Various procedures of treatment and rehabilitation are discussed in relation to actual results. The roles of the police and other agencies assigned to deal with the juvenile offender are examined, and procedures of courts and of the probation process are described and illustrated through case materials. The contributions of many disciplines—including psychology, sociology, and anthropology—to the understanding and treatment of truancy, gang behavior, and delinquency are fully presented, with much attention being given to the development of guidance clinics and treatment-oriented institutions.

SCHAAF, W. L. *Basic Concepts of Elementary Mathematics.* New York 16: John Wiley and Sons, Inc., 440 Park Avenue South. 1960. 404 pp. This book affords the reader a genuine insight into the true nature of mathematics as an intellectual discipline. Rather than show how to perform mathematical operations, the author has chosen to show why these operations work; why multiplication, for instance, produces the answers it does—and why these answers are "correct."

It is a book with a distinctly "modern" flavor, equally useful to teachers, students, and laymen. Dealing with the aximatic foundations and logical principles of mathematics, it discusses such significant concepts as exponentials, measurement, and probability. The basic theme stands out clearly: mathematics is a unique way of thinking, and can be appreciated only if its inner structure is understood.

Writing in lucid, informal, yet forthright style, Professor Schaaf makes the subject accessible to everyone with an interest in it. The book includes 650 examples, problems, and discussion questions, as well as many stimulating and timely references for further reading and study.

SEIDMAN, J. M. *The Adolescent.* New York 17: Holt, Rinehart, and Winston, 383 Madison Avenue. 1960. 870 pp. $6.50. A comprehensive and balanced picture of adolescent personality and development is presented in these 72 articles—34 of which have been published since 1955. Written by eminent leaders in the fields of psychology, sociology, anthropology, and

education, the selections treat such varied topics as the status of adolescents in American society, anxiety in classroom examinations, and a new look at the curve of intelligence.

SHRIVER, R. P. *The Years of Youth.* Ohio: Kent State University Press, 1960. 266 pp. This is the story of Kent State University, northeastern Ohio's state-supported institution of higher learning and one of the youngest and fastest-growing universities in the country. It is the fast-moving story of the men who were responsible for the founding of a normal school, which in a half century has developed into a major university. It also is the story of the many colorful men and women who played and still play important roles in developing human resources for Ohio and the nation as a whole.

The author, an authority on the Buckeye State, does not confine his narrative to the campus and its immediate area of service. In clear and straight forward language, he ties in the development of the University with the growth of Ohio, particularly the heavily populated northeastern section of the state. He spells out in detail the long and occasionally bitter struggle for state-supported higher education in northern Ohio. He tells how the battle was finally won and how the University has developed to the point where it now includes a graduate school and four undergraduate colleges.

STRANG, RUTH. *Helping Your Gifted Child.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 270 pp. $4.50. Discussing gifted children by age group—pre-school, school, and adolescent—the author shows through fascinating case histories that their gifts may lie in a variety of fields: in the arts, in mathematics, in social and physical skills, as well as in purely academic subjects. Gifted children come from all kinds of homes. Some need control; others need freedom. Some need to be challenged; others are over-stimulated. Some are egotistical; others feel inferior.

———, and DONALD M. LINDQUIST. *The Administrator and the Improvement of Reading.* New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1960. 119 pp. $1.10. The purpose of this book is to give brief but concrete answers to questions about reading. Never having had a course in reading in his preparation for his administrative position, the administrator often feels at a loss as to what to do to improve the teaching of reading in his school or school system. He is not entirely clear as to what reading involves; conflicting points of view confront him. He really does not know how well students in his school read—how can he find out? He has heard about many different kinds of reading programs--which is most suitable for his school, how can he initiate and develop it? Should he focus attention on the poor readers or try to raise the level of reading of all students? Should he schedule time for special classes or expect teachers of every subject to teach reading? What progress in reading should he expect grade by grade? Are there learning sequences in the development of reading from kindergarten to college? If he has money in his budget to employ a reading specialist, what should his qualifications and duties be? What qualifications and education do teachers who take an active part in the reading program need? What kind of in-service education should be provided to help all staff members grow in their responsibility for the improvement of reading? What space, equipment, and instructional materials are needed for a whole-school reading program? These are some of the questions intelligent administrators ask.

TAYLOR, L. O., D. R. MC MAHILL, and B. L. TAYLOR. *The American Secondary School.* New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd

Street. 1960. 506 pp. $5.50. This volume has been divided into four parts. Part I is concerned with the identification of the aims and purposes of the high school. Specifically, it deals with the characteristics of our youth and of the American secondary school as an institution which has been shaped by our evolving culture. Part II is devoted to a consideration of the means and the materials by which the purposes of the high school can be achieved. There is an explanation of how the curriculum of the American high school has developed. Proposals have been made for the modification of the curriculum to adapt it better to the role of the high school in our contemporary culture. Part III is allotted to the presentation of five significant problems in secondary education.

In providing a type of education adapted to all American youth, certain very difficult problems have become prominent, especially for the beginning teacher. A study of these problems provides a more complete interpretation of the principles of secondary education developed in Parts I and II. As students wrestle with these problems, they comprehend the principles of secondary education more fully and expand and fix them. Part IV deals with certain assumptions for improving service to youth. These assumptions seem entirely justified if it is realized that both the state and the national government need to protect our youth from practices that permit a poor quality of education to be provided.

THELEN, H. A. *Education and the Human Quest*. New York 16: Harper and Brothers, 49 East 33rd Street. 1960. 224 pp. $4.75. The author outlines his ideas of educational theory and practice. He outlines a program for a drastic over-hauling, emphasizing what education can be if we harness all we know about man, knowledge, and society. Professor Thelen presents classroom procedures as models to illustrate ways in which education becomes not only a process of memorization or consumption of knowledge, but also a process of inquiry.

THOMAS, R. M. *Judging Student Progress*. New York 18: Longmans, Green and Company, Inc., 119 West 40th Street. 1960. 528 pp. $5.50. This second edition is intended to help develop the knowledge and skills needed and used by effective elementary and junior high-school teachers in diagnostic and remedial teaching; presented in terms of objectives, with practical illustrations. This edition contains (1) a detailed revision of many chapters to bring to the teacher recent developments in evaluation and to furnish additional examples of uses for evaluation techniques in classrooms; (2) two new chapters: "Marking Student Progress" and "Developing Students' Evaluation Skills"; and (3) a new appendix giving up-to-date sources of standardized tests.

————, and S. G. SWARTOUT. *Integrated Teaching Materials*. New York 18: Longmans, Green, and Company, Inc., 119 West 40th Street. 1960. 559 pp. $6.75. In this audio-visual text, the authors show that new teachers must have help in the skillful selection and use of a wide variety of teaching materials (including reading sources, which are too often taken for granted), that they should be able to create their own materials and give equal attention to both creation and selection, and finally that this selection, creation, and use of materials will be best and most quickly learned by the new teacher provided he is given not only general principles but also specific examples of the ways in which other teachers have used audio-visual materials.

Those First School Years. Washington 6, D. C.: National Education Association, 1201 Sixteenth Street, N. W. 1960. 254 pp. This book was

designed to help elementary-school principals meet their responsibilities for the school program at the primary level—kindergarten through grade three. Teachers and parents, as well as principals, may find the articles helpful as they, too, seek to learn more about young children. Discussed in this book are: The Focus Is the Child; The Child in Society; Early Childhood Education in Action; The Physical Environment; Home-School Relationships; Status and Trends.

Books for Teacher-Pupil Use

ADAMS, ANDY. *Brazilian Gold Mine Mystery.* New York 10: Grosset and Dunlap, Inc., 1107 Broadway. 1960. 182 pp. $1. "Guard this letter as you would your life!" With these words ringing in his ears, Biff Brewster boards the Brazil-bound plane to join his father on a safari to the headwaters of the Amazon River—a safari that, to Biff's amazement, becomes a deadly contest for fabulous riches.

ADLER, IRVING. *Mathematics, Exploring The World of Numbers and Space.* New York 20: Golden Press, Inc., 630 Fifth Avenue. 1960. 96 pp. (10½" x 12"). $3.99. This book does not teach ordinary arithmetic as it is generally studied in school. It does tell of the extraordinary things that come from the use of what is studied. It unfolds the story of man's struggle to explain the quantitative aspects of the world in which he lives. It tells the story of exceedingly small numbers, and numbers so large as to be beyond comprehension—from the infinitesimal to the infinite. It takes the pupil from a point, along a line, into a plane, out into space, and even beyond our space. And it shows how space itself was finally conquered by number.

This book also deals with practical things, such as how to make parallel lines and perpendicular lines, and where they are used. It describes the angles that a surveyor needs to know, and shows how to discover the speed at which a stone is falling or a rocket is traveling in space. How to find an area or a volume or how, by the use of probability, to predict one's chances of winning a game are simply explained.

AMRINE, MICHAEL. *The Great Decision.* New York 16: G. P. Putnam's Sons, 210 Madison Avenue. 1959. 251 pp. $3.95. Here for the first time is a story of the world's greatest surprise—the atomic bomb, from the moment President Truman learned of its existence till 116 days later—Hiroshima. Here is the story day by day, week by week, of all the major actors in this terrible world-shattering event. But there is more than this—here too are the facts for all those whose conscience has labored with the weight of atom bombing, whose questions have remained unanswered.

ANDERSON, C. R. *Emily Dickinson's Poetry, Stairway of Surprise.* Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 352 pp. $5.95. This book offers an exciting voyage of discovery into the heart and mind of one of America's greatest artists. For over thirty years, Emily Dickinson has been widely acclaimed as one of our foremost poets, but, so far, she has been treated mainly biographically—no book has yet been published exclusively concerned with interpreting her poetry to *show* why it is great.

ANDERSON, LEE. *Nags Head and Other Poems.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 147 pp. $3.95. The author, whose poetry has been acclaimed by poets and critics alike, has been published in *Poets of Today, III,* and has also appeared in anthologies and

literary magazines. In addition to his writing, he is a research associate at Yale University, where he has assembled the world's largest tape collection of poets reading their own works. Mr. Anderson's reading of *Nags Head* is soon to be released in the Yale Series of Recorded Poets.

ANDREWS, R. W. *Heroes of the Western Woods.* New York 10: E. P. Dutton and Company, 300 Park Avenue. 1960. 192 pp. $3.50. In this book the author brings these rugged pioneers vividly to life. While telling their individual stories, he also presents a memorable and authentic picture of the awe-inspiring challenges, the bitter disappointments, the dangers and the incredible accomplishments of those early logging days.

ANNIXTER, JANE and PAUL. *Horns of Plenty.* New York 11: Holiday House, 8 West 13th Street. 1960. 203 pp. $2.95. Young Gary Luckett had the woods sense of his nature-wise father and something of his mother's intuitive feeling about the rights of their wild-animal neighbors. He admired Big Eye, the trophy-horned patriarch of the dwindling band of bighorn sheep. He respected Old Gray, the wily silver-tip grizzly that was the last of his kind. And he had a healthy fear of the aging tom cougar whose failing powers were turning him into a man-killer.

ARCHIBALD, JOE. *The Richie Ashburn Story.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. Twice the National League batting champion, Richie Ashburn has long been regarded as one of the most dangerous leadoff hitters in the major leagues. His speed, bunting skill, eye for the strike zone, and ability to place his hits have combined to give him a total of 2,240 hits, with an assurance of reaching the select circle of players who have compiled 3,000 hits in their careers. In the field he is equally adept, holding the major league record for the number of putouts by an outfielder for nine straight years.

ARNOLD, PAULINE, and PERCIVAL WHITE. *Homes: America's Building Business.* New York 11: Holiday House, 8 West 13th Street. 1960. 389 pp. $4.50. This book begins with a broad overview of the history of homes, from caves to palaces to split levels in exurbia. In greater detail it traces the development of American homes, from cabins in the New England wilderness to cantilevered cottages on the Pacific cliffs. But the history of homes is only a small part of this book. Its major emphasis is on home-building *today*—the so-called "shelter" industry. Building and furnishing homes for mid-century America embraces almost every phase of modern business and technology: research, invention, manufacture, finance, selling—not to mention the involvement of all of us as individuals.

ASHTON-WARNER, SYLVIA. *Spinster.* New York 20: Simon and Schuster, 630 Fifth Avenue. 1958. 243 pp. $3.75. This is the story of a brilliant, compassionate, impulsive woman. She is a genius at her job: at curbing the ferocities, soothing the spirits, goading the intellects of her seventy fighting, bawling, dancing, playing, and (sometimes) learning pupils. Her difficulties lie in dealing with the world beyond—with men, with a young teacher, with an old love.

BAKER, RACHEL, and J. B. MERLEN. *America's First Woman Astronomer.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. In 1847 young Maria Mitchell discovered an unknown comet and soared to fame as one of America's great scientists. She was the first professor of astronomy at Vassar College and the first woman to be elected to the American Academy of Arts and Sciences.

BALLARD, L. C., and F. L. BEALS. *Spanish Adventure Trails.* San Antonio 6, Texas; Naylor Company, 918 North St. Mary's Street. 1960. 203 pp. $4.95. Exciting adventure rolls across these pages as the daring conquistadores—"the conquerors"—span the oceans between the Old World and the New, seeking lands and riches for their kings; fortunes, glories and triumphs for themselves. These are the historic accounts of seven explorers and one missionary priest who blazed the trails from Mexico to California. Ever seeking the rumored wealth of Indian infested lands, seven of these men led armies across Texas to Oklahoma and Kansas; braved the deserts and mountains of Arizona, New Mexico, Nevada, and Colorado finally to settle colonies along the California coast.

BAUM, L. F. *The Wizard of and the Land of Oz.* New York 21: Looking Glass Library, Imprint of Epstein and Carroll, Inc., 127 East 69th Street. 1960. 415 pp. $1.95. Here are the first two of the famous Oz books in one volume, *The Wizard of Oz* and its sequel, *The Land of Oz.*

BEALS, CARLTON. *Brass-Knuckle Crusade.* New York 22: Hastings House, 151 East 50th Street. 1960. 312 pp. $5.95. The disturbing mass movement that swept America in the decades preceding the Civil War comes to life in the pages of this book. Manifested by secret societies such as the Supreme Order of the Star Spangled Banner, and by political gangs like Baltimore's "Blood Tubs," and culminating in an alarmingly successful political party, the Know-Nothing movement was a hatred-born, bigotry-riddled crusade against Roman Catholics, Negroes, the foreign-born, and those who in any way failed to conform to the "right thinking" of old-line "native Americans."

BECKHARD, A. J., and W. D. CRANE. *Cancer, Cocaine, and Courage.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 191 pp. $2.95. From the pages of medical history comes the inspiring life story of Dr. William Stewart Halsted, who unwittingly became a drug addict, overcame the habit, and went on to perform miracles of surgery. His life was dedicated to tracking down the source of infection, and he was the first doctor in America to practice aseptic surgery. In the late nineteenth century, his insistence on scrupulous cleanliness revolutionized operating techniques and saved countless lives.

BERNSTEIN, LEONARD. *The Joy of Music.* New York 20: Simon and Schuster, 630 Fifth Avenue. 1959. 305 pp. $5.95. Hailed as a great conductor, as a pianist, and as a composer of both symphonic and show music, Leonard Bernstein has earned an entirely new title in the past few years. Through the medium of television he has become America's music teacher, introducing millions to the meaning and the joy of music.

By means of his extraordinarily skillful and imaginative editing, Mr. Bernstein has succeeded in projecting—in print—the same gusto, clarity, and charm that distinguished his *Omnibus* television shows. *The Joy of Music* contains seven of these *Omnibus* scripts, illustrated, expanded and interpreted, and a collection of essays and conversations of great wit and warmth. The scripts have been prepared to bring home every point to the reader in a clear, original and memorable manner, by means of a full photographic section, black-and-white illustrations, many musical examples and numerous diagrams. They have been prepared so that even the layman who cannot read a note of music will enjoy *The Joy of Music.*

BLIVEN, BRUCE, JR. *From Pearl Harbor to Okinawa.* New York 22: Random House, 457 Madison Avenue. 1960. 192 pp. $1.95. This book describes every major action that engaged the United States and her allies

in the Pacific Theater during World War II: Bataan, Corregidor, Midway, Guadalcanal, New Guinea, Burma, the Phillipine Sea, Leyte, Iwo Jima, Okinawa, Hiroshima, and many, many more. With remarkable simplicity, the author traces the grand strategic patterns of the war—the Japanese plan for conquest and the magnificent Allied counter-offensive. In addition, the book provides a dramatic record of men in battle on land, on sea, and in the air. Here are the heroic stories of scores of brave individuals—generals, admirals, captains, sergeants, and privates.

BLUMENTHAL, J. C. *English 2600: A Scientific Program in Grammar and Usage*. New York 17: Harcourt, Brace and Company, Inc., 750 Third Avenue. 1960. 447 pp. $2.60. In *English 2600*, each lesson consists of a series of very small steps through which the student will reason his way—one step at a time. The advantages of "reasoning his way" instead of "being told" have been known to good teachers ever since the days of Socrates. There is no separation between explanation and exercise, as in other textbooks; the two are woven tightly together. Every step, or *frame*, calls for a written response, which requires both *thinking* and *attention*. The student will learn to think and to concentrate in a way that will be useful to him in all his studies—both in high school and college.

This method aims to prevent mistakes before they happen. The psychologists call this "errorless learning" and have proved its importance by scientific experiment. The steps are so small and their arrangement is so orderly that the student is likely to make very few errors. When an error occurs, the student discovers his mistake immediately and goes no further in the wrong direction. It is as though a watchful teacher were looking over his shoulder—ready to put him back on the track the moment he wanders off. He is corrected before a wrong habit can become established. He spends his time *learning*—not *unlearning*.

Most important of all is what the psychologists call *reinforcement*. Its importance in learning cannot be stated too strongly. Lets see just what this word means. With the usual textbook, the student first studies the lesson (which he may or may not understand thoroughly). Finally he does an exercise of perhaps twenty or thirty sentences on the points of the lesson. Unfortunately, he does not find out until some time later (often the next day) whether he did the exercise right or wrong.

With *English 2600* the student finds out as soon as he turns the page whether his answer is right. At this point something very interesting and mysterious happens in his brain. The instant he finds out that he is right, the idea "takes root," so to speak, in his brain. This does not happen as successfully when time (even a moment or two) is allowed to elapse before he discovers that he is right.

Finding out immediately that he is right is called *reinforcement*, and the quicker and more often this happens, the better he learns and the better his learning sticks. A reinforcemennt is something like a reward; and if he has ever taught a dog tricks, he knows from experience how the biscuits speed up learning.

BOTTER, DAVID. *Politicians and What They Do*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1960. 213 pp. $3.95. In a lively book full of human interest, the author, longtime journalist, gives an account of more than a dozen contemporary American politicians, telling how they happened to enter politics, what they do on their jobs, and how they feel about their work.

Included are chapters on a representative to a state legislature, a district leader, a county executive, a mayor, a sheriff, a district attorney, a judge, a member of the school board, a secretary of a state, a state governor, a Congressional representative, a United States senator, a cabinet member, a National Committee chairman, and the Presidency.

BOWLES, F. H. *How To Get Into College.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 185 pp. $2.95. Dr. Bowles has brought this new revised edition completely up to date and has added new material on such subjects as schools without adequate college preparatory programs, advanced placement courses, and information on new tests. Discussions on what to do if the only available high school is poor, and what to do if you are overseas and must prepare your child for college have also been included. All tests are more fully explained; prices for them are quoted, and reasons for them detailed. There is additional information on private and public colleges in relation to size, expense, and programs.

BRADBURY, MALCOLM. *Eating People Is Wrong.* New York 22: Alfred A. Knopf, 501 Madison Avenue. 1960. 275 pp. $4. The story is of a clash of generations which takes place in a provincial English university, and the comedy it provokes is of many kinds—subtle and slapstick. But, though the setting is England, the theme is international: that of a pre-war man beset by Angries and Beats who care little for old-fashioned niceties.

BURGESS, ALAN. *Seven Men at Daybreak.* New York 10: E. P. Dutton and Company, 300 Park Avenue. 1960 233 pp. $3.95. On a cold night in December of 1941, a group of free Czechs parachuted into the snowbound countryside of their Nazi homeland. Of these men, two were singled out for what was to be the most daring underground mission of World War II—the assassination of SS General Reinhard Heydrich, the most ruthless butcher in Hitler's hierarchy. Jan Kubis and Josef Gabchick, chosen for their extreme courage and hatred of the Nazis, had trained for months in the art of murder in the hills of Scotland, but both were unprepared for the events that followed their landing in Czechoslovakia. In the fall, Josef's foot was hurt so badly that they were forced to hide out while he recovered. Months went by as they tried to enlist the help of their countrymen, most of whom hated the Nazis but were too terrified to act. At last they were able to make contact with the resistance leaders in Prague, but still there were delays and time-consuming precautions. Each plan that Jan and Josef put forth seemed more impractical than the last. Meanwhile General Heydrich butchered and tortured the Czechs, ordered mass murders, and executed millions of Jews.

BURSEY, JACK. *Antarctic Night.* Skokie: Rand McNally and Company, 8255 Central Park Avenue. 1960. 256 pp. $4.95. Through the ages men have been lured by the desire to go where no other man has been. For Lt. Comdr. Jack Bursey, Antarctica cast such a spell, and this is the story of his life-long bewitchment with the Great White Continent. Jack Bursey fell in love with Antarctica over forty years ago as a boy of ten in the north of Newfoundland where he was born, and where he read by candlelight all he could find about her. He worked his dogs, hunted and skinned seals, and exposed himself to the cold to be fit to follow in the footsteps of early South Polar explorers and to learn the secrets of the mysterious Antarctic for himself. *Antarctic Night* is his personal telling of how his dream came true, first on Byrd's Antarctic Expedition of 1928-1930, again on the U.S. Antarctic Service Expedition of 1939-1941, and finally on Operation Deepfreeze of 1955-1957.

BURT, OLIVE. *First Woman Editor—Sarah J. Hale.* New York 18: Julian Messner, Inc., 8 W. 40th Street. 1960. 191 pp. $2.95. In 1827 Sarah Hale astonished America by editing the first magazine for women. She stirred their imagination with her daring articles on women's rights, flattered them by her edicts on fashions and manners. At a time when few "females" cared to write for publication, her first novel was a sensational success. She was a crusader, a reformer, and a champion of women's rights long before the suffragist movement caught fire.

BURTON, MAURICE. *In Their Element—The Story of Water Mammals.* New York 16: Abelard-Schuman, Limited, 404 Fourth Avenue. 1960. 155 pp. $3. The first mammals evolved millions of years ago, when aquatic creatures left the rivers, the lakes, and the sea to live on dry land. They became warm-blooded, and grew coats of hair or fur. With the passing of time some mammals began to return to the water. Only whales, seals, and seacows have done this completely, but there are many other animals who use water as a refuge or as a feeding ground and who are specially equipped by nature for this form of life.

CAIDIN, MARTIN. *Black Thursday.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 320 pp. $4.95. From the still-dark barracks of sixteen American bomber bases in the English midlands, on October 14, 1943, over 3,000 American airmen were summoned from their beds to attend a series of vital, early-morning briefings. Hours later, 291 U. S. heavy bombers and their escort of 103 fleet P-47 Thunderbolt fighters, rumbled down their runways, crossed the coast line, and emerged from the cover of rain and fog into the sunlit No-Man's Land high above German-dominated Europe. Their mission: to attack and destroy the heavily-defended German ball-bearings center of Schweinfurt.

CARPENTER, F. G. *Carp's Washington.* New York 36: McGraw-Hill, 330 West 42nd Street. 1960. 316 pp. $5.75. Scandal and corruption in high places . . . great dinners at which the distinguished guests ate off rented china . . . the new Washington boardinghouse keepers . . . the new Washington Monument, towering higher than any other structure made by man—these things were a part of Washington in the 1880's, a part of Carp's Washington.

CARTER, JOEL. *How To Make Athletic Equipment.* New York 10: The Ronald Press Company, 15 East 26th Street. 1960. 390 pp., 167 illustrations. $6.75. This guidebook gives instructions for improvising and constructing the supplies and facilities commonly used for team sports, individual and dual sports, physical conditioning, locker and training rooms, and children's playground activities. Detailed designs are provided, along with lists of necessary tools and materials, and step-by-step directions for completing the work. The directions are kept simple so that a school shop or anyone with average mechanical ability and access to common tools can make the equipment.

When a piece of equipment can be made in several ways, the book describes the one or two "best" methods, with a mention of suitable alternate plans and materials. The designs—many of them provided by coaches, physical education instructors, and playground and recreation directors—have been chosen on the basis of low cost, availability of materials, simplicity of construction, and durability. All items of equipment are listed alphabetically in chapters and fully cross-referenced.

This illustrated book will be of invaluable aid to those responsible, at all levels, for providing equipment for physical education and athletic programs

within a restricted budget. Nearly 200 layouts and designs of gear are provided as guides to building equipment necessary for football, basketball, gymnastics, baseball, track and field, locker rooms, training rooms, *etc.*

CATTON, BRUCE. *The American Heritage Picture History of the Civil War.* New York 22: Doubleday and Company, Inc., 575 Madison Avenue. 1960. 630 pp. (8½" x 11"). $19.95. During the past century, each new generation of Americans has discovered the fascination and deep meaning of the Civil War. An average of perhaps a book a day has been written on some aspect of this great conflict (the New York Public Library has over 18,000 volumes on the subject)—testimony to the abiding mark the struggle left on the American people.

Yet, despite the enormous bulk of the record, this book is a totally new *kind* of history, fresh in concept, and quite alone in execution. Here is the true *look* of the war—in 836 pictures, including many, many more in color than have ever been seen in print before. The illustrations range from the superb photographs of Mathew Brady and the famous sketches of Winslow Homer to dozens of hitherto unknown paintings, drawings, and eye-witness battle scenes, hidden away or neglected for almost a century. No previous single volume on the war has even approached the magnitude and especially the color of this collection.

Here too is a fast-moving narrative, covering both the military and political aspects of the war, by the man who is probably its most famous living student, Bruce Catton. The author, Senior Editor of *American Heritage* and winner of a Pulitzer Prize for History, is the author of *A Stillness at Appomattox, This Hallowed Ground, Grant Moves South,* and many other histories of the Civil War period.

Only a master of the subject could encompass those crowded years of history in such a vital narrative, evoking the sweep and drama of a nation at war, bringing to life leaders and common soldiers of both sides.

Accompanying the pictures are text blocks and captions by the staff of the American Heritage Publishing Company Book Division. More than just labels, the captions are carefully designed to supplement the narrative. The book's 18 especially drawn and painstakingly researched battle picture-maps make it possible to trace the actual maneuvers of famous battles and are a noteworthy contribution to the understanding of the war.

CHRISTOPHER, MATT. *Wing T Fullback.* New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1960. 152 pp. $2.95. Bernie Morello knew how to play football, but he didn't know how to make the grade with the boys from the better side of town where his new school was located. Bernie came from below the viaduct, where the hardworking immigrant families lived. How Bernie lost a game but won the respect of his fellow players marks the climax of this thrilling football story by an experienced sports writer.

CIARDI, JOHN. *39 Poems.* New Brunswick, New Jersey: Rutgers University Press, 30 College Avenue. 1960. 86 pp. $3. This, John Ciardi's sixth book of poems, is his strongest and best. Technically he has gained a flexibility and sureness with his material that permits him more freedom in his forms and a clearer expression of poetic power under full control. This book embodies and intensifies concern with the general human lot. It reaffirms John Ciardi's stature as one of the most considerable of contemporary American poets.

CLARK, B. H. *World Drama.* New York 14: Dover Publications, 180 Varick Street. 1933. Volume I. 684 pp. (25 unabridged plays) $2.25, Volume II. 704 pp. (20 Unabridged Plays) $2.25, the set $4. This anthology was designed not only for the serious student of world literature and the drama, but for everyone interested in the stage. It is an unusual collection, containing many great plays which are not ordinarily to be found in anthologies, and several which are not currently to be found in print in English in any edition. Virtually every great dramatic tradition is represented—Greek, Roman, Indian, Chinese, Japanese, Medieval, as well as such national traditions of Europe as Italian, Spanish, English, French, German, Danish, Russian, and Norwegian.

CROCKETT, L. H. *The Year Something Almost Happened in Pinoso.* New York 14: Pantheon Books, Inc., 333 Sixth Avenue. 1960. 159 pp. $3. Pinoso Del Palancar, a town that is nowhere but might be in any part of Spain, was thought to be un-noteworthy in every respect. Only Padre Alberto among all who lived there felt the town had some claim to glory. If it required a miracle to convince the others, then: Let there be a miracle!

About this time a German circus, having suffered a series of misfortunes, abandoned a group of wild animals there. It was impossible to provide adequately for the beasts so, rather than see them shot, the boy Paco released them from their cages. Lion, tiger, camel, baboon, monkey, elephant, snake, all frolicked over the town, setting off spurts of activity and hilarity in all directions. The lioness gave birth to cubs that became the town's pets. Mothers even took to leaving their babies in the lioness' care when they went down to the river to do their washing. In short, the animals had all become miraculously tame.

CROWDER, N. A. *The Arithmetic of Computers.* Garden City, New Jersey: Doubleday and Company, Inc. 1960. 480 pp. $3.95. In this book you are introduced to a clear explanation and practical understanding of the two number systems used in electronic computers: octal and binary. First of all, you learn about positive and negative exponents and coefficients. You teach yourself the octal and binary number systems, and are now ready not only to meet a computer, but also to recognize both its capabilities and limitations. To use and enjoy this book, you need only two things: a knowledge of basic mathematics and an open mind. It is a stimulating and useful book for the growing ranks of mathematics enthusiasts in this age of automation.

————, and G. C. MARTIN. *Adventure in Algebra.* Garden City: Doubleday and Company, Inc. 1960. 360 pp. $3.95. Adventures in Algebra begins with the elementary consideration of the use of symbols in mathematics. Proceeding to a deeper understanding of the concept of numbers, the authors take the reader through some of the classic proofs which are milestones of mathematical thought. Here is a book both fascinating and useful to the general reader and the math enthusiast.

Current History Review of 1959. Skokie: Rand McNally and Company, 8255 Central Park Avenue. 1960. 192 pp. $4.95. This unique reference book will fill a long-felt need for students, librarians, businessmen, radio and TV commentators, and many others. For the first time, it makes available in one volume the series of monthly reviews of important events throughout the world that has long been one of the most valuable features of *Current History.* Arranged alphabetically by country and also chronologically, it provides a day-by-day summary of the major events of the year which can be used in a multitude of ways.

DAVIS, BURKE. *Our Incredible Civil War.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 249 pp. $4.95. This book deals with that strange, romantic, and brutal conflict, the Civil War. In the years of collecting material for his well-known works on the Civil War, the author was struck by some of the extraordinary aspects of its battles and characters. The result is this book which provides a new look at the personalities and changes of an entire epoch.

In a chapter entitled "Firsts," he reveals that the years 1861 to 1865 introduced into American life the first successful submarine, the snorkel, the periscope, flame throwers, aerial reconnaissance, the income tax, the first Negro U.S. Army officer, and a host of others. The author provides insights into the mind of Robert E. Lee, who liked to have his feet tickled when he read aloud to his children, and into the curious world of hypochondriachal Stonewall Jackson, who "was comfortable only when in a bolt upright position, with his organs held naturally, one atop another."

Other chapters are filled with such startling revelations as the fact that the Civil War was known by twenty-five different names, and that Theodore Roosevelt and his brother Elliott (Eleanor Roosevelt's father) were spectators at Lincoln's funeral procession.

de JONG, DOLA. *By Marvelous Agreement.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1960. 213 pp. $2.95. This is the warm and moving story of Roza van der Hoop, a seventeen-year-old Dutch war orphan, who comes to the United States to live with an American family, the Remingtons. Shy, sensitive Roza is suddenly transplanted from the cheerless regimentation of an orphanage in Holland, and the responsibility of her first job, to the happy hustle of apartment life in a large American city.

de la MARE, WALTER. *A Penny a Day.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1960. 209 pp. $3. Here, in this volume, are many of the author's favorite stories, some long out of print, all of them remembered and cherished. These are the stories the author told his own family. This very special selection includes *A Penny a Day, The Three Sleeping Boys of Warwickshire, The Lovely Myfanwy, The Dutch Cheese, Dick and the Beanstalk,* and *The Lord Fish.*

DICKSON, G. R. *Secret Under The Sea.* New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 121 pp. $2.95. From the day Robby and his dolphin discovered enormous footprints on the ocean bed, the young reader shares an unusual underwater adventure filled with excitment and humor. Interesting facts on deep sea plant and animal life are included, as well as factual details on underwater exploration.

DOUGLASS, E. L. *The Douglass Sunday School Lessons, 1961.* New York 11: The Macmillan Company, 60 Fifth Avenue. 1960. 514 pp. $3.25. The 1961 edition of this well-known and widely used commentary includes carefully selected visual aids for each Sunday, daily Bible readings (King James version), and many practical suggestions for the teacher. This year the lessons feature the Gospel of St. John, Biblical Wisdom and Ethical Problems, Personalities of the New Testament, and Christian Growth, as officially outlined for the International Sunday School Lessons.

With the help of this widely acclaimed volume, now in its fortieth consecutive year, fresh, interesting, and dynamic lessons are easily prepared. The author's long experience, his skill as a writer and a teacher, and the spiritual

values inherent in his community, make this a valuable guide to everyday Christian living.

DOWNEY, GLANVILLE. *Belisarius.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 192 pp. $3. Against a vibrant background of significant events which marked the magnificent reign of Justinian the Great, Belisarius emerges with depth and reality. His dynamic personality dominates the scene, as Belisarius leads the Roman Army to victory over the Persian invaders of Syria, suppresses the bloody Nika Rebellion, which threatened the Emperor's throne, and enjoys a rare respite with his new wife, the lovely Lady Antonina, before giving his full attention to the colossal feat of reconquering the Roman provinces of North Africa which had fallen to the Vandals.

DUDLEY, D. R. *The Civilization of Rome.* New York 22: New American Library of World Literature, 501 Madison Avenue. 1960. 256 pp. 50¢. An account of the glory that was Rome—its politics, history, religion, art—from the senators of the republic to the Caesars of the empire. Includes 16 pages of illustrations and 4 maps.

EAST, BEN. *Narrow Escapes and Wilderness Adventures.* New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 321 pp. $4.50. Here's a collection of 21 true action stories—the best of Ben East, his most exciting and inspiring narratives of narrow escape, written over the past 30 years. In each of these thrilling tales, this master outdoor writer recreates a dramatic adventure of an ordinary man, usually alone, facing and surviving a sudden threat to his life.

EIFERT, V. S. *Land of the Snowshoe Hare.* New York 16: Dodd, Mead and Company, 432 Park Avenue. 1960. 271 pp. $4. This is the story of the North Woods, a book to transport the reader into some of America's best loved and least crowded vacation country. A land of coniferous forests, quaking bogs, and clear, cold lakes, home of the loon and muskellunge, it is fishing country, deer country, haunt of wild flowers left from the Ice Age.

Into this clean, cool world, the reader goes with an experienced and sensitive naturalist on expeditions of personal discovery to find the partridge on her nest, beaver kits crying in their lodge, the mystery bird of the bog, the bear on his secret trails, or mushroom gardens planted by beetles inside a tree.

ERDMAN, L. G. *Many a Voyage.* New York 16: Dodd, Mead and Company, 432 Park Avenue. 1960. 319 pp. $3.95. Few women have ever had to summon up such devotion, trust, courage, adaptability and understanding in a marriage. Energetic, idealistic Edmund G. Ross lived every moment for the sake of his deep convictions. He spoke out constantly for the freedom of the slaves and aided the underground railway; he helped bring the railroads to the West; he took part in framing the constitution that made Kansas a state; when war came, he served as a major in the Union Army. Then, after accepting an appointment to the Senate, he incurred the curses of his fellow senators and Kansas constituents, and caused the ostracism of his family at home, when he cast the deciding vote that saved President Andrew Johnson from conviction during the infamous impeachment trial—a monumental self-sacrifice which is now regarded as one of the noblest acts in the history of American politics, for it preserved the established form of constitutional government.

EWING, J. H. *Jan of the Windmill.* New York 3: Henry Z. Walck, Inc., 101 Fifth Avenue. 1960. 242 pp. $3.50. On a dark night, when the wind howled and the rain streamed down, the infant Jan was abandoned at the home of an English miller and his wife. The boy was brought up as one of the miller's sons, going to Dame Datchett's school in the village, playing in the mill, and minding the pigs. But the quiet of Jan's life was disturbed by the evil Cheap Jack, a hunchback pedlar whose greed was aroused by the boy's special ability to draw. Jan, kidnaped and brought to London, was made to support Cheap Jack by drawing on the sidewalks of the city. But the villain was outwitted, and, with the help of a kind painter, Jan at last solved the mystery of his birth and achieved success, fame, fortune, and happiness in true Victorian fashion.

FELSEN, H. G. *Boy Gets Car.* New York 22: Random House, 457 Madison Avenue. 1960. 314 pp. $2.95. Can a teenager afford a car? Even a cheap old one? Woody got his car—for forty dollars. He named it Sidekick. And from the moment the thirteen-year-old-wreck became his very own, Woody lavished on it all his love and devotion, to the exclusion of virtually all the other activities that are a normal part of a teenager's life.

FITZGERALD, F. S. *Taps at Reveille.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 351 pp. $4.50. This is by far the largest of the four original collections, containing as it does eighteen of his best stories, most of them written between 1928 and 1932. Five are about Basil Duke Lee and three concern the young belle Josephine—two of the author's most popular characters. Among the remaining stories are the classic "Babylon Revisited" and such highly regarded pieces as "The Last of the Belles" and "Crazy Sunday." In all, ten of the stories in this collection are unavailable in any other volume.

————. *Six Tales of the Jazz Age and Other Stories.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 192 pp. $2.95. There are six stories from *Tales of the Jazz Age,* a collection published in 1922 and three from *All the Sad Young Men,* originally published in 1925. There is evidence here of a growing subtlety and introspection, already seen in *The Great Gatsby,* that was to produce two extraordinary major works—*Tender Is the Night* and that portion of *The Last Tycoon* he was able to finish before his death. None of these stories is duplicated in another available volume.

FLINT, K. D. *English for New Americans.* Philadelphia 39: Chilton Company Book Division, 56th and Chestnut Streets. 1960. 192 pp. $2.50. This course in beginning English is the product of several years of teaching experience in the field of adult education. It has been revised many times. The vocabulary and the grammar are simple; the subject matter and its presentation are adult; the course can be taught by nonprofessionals; the course can be used for group as well as individual teaching. The subject matter makes an appeal to students of either sex and of any age. It can be taught without regard to the native language of the student. Also prepared to accompany this book is the *Student Workbook* (96 pp. $1.00) which contains supplementary practice exercises related to the everyday activities and interests of students.

FREE, A. R. *Social Usage.* New York 1: Appleton-Century-Crofts, Inc., 35 West 32nd Street. 1960. 254 pp., paper cover. $1.95. This book, while written for college students, will be usable in high-school classes. Topics discussed are: appearance, introductions, conversation, public manners, table

manners and service, invitations and replies, name cards, personal letters, dating, engagements, weddings, travel tips, *etc.*

FRIAR, J. G. and G. W. KELLY. *A Practical Spanish Grammar.* Garden City: Doubleday and Company, Inc. 1960. 184 pp. The primary purpose of this course in Spanish is to furnish the minimum essentials of Spanish grammar in a very short period of time. The book has been purposely condensed in order to make its use practical. The fundamentals of Spanish grammar are given in the lessons and the first part of the Appendix. Practice material follows.

The Spanish-English vocabulary includes only the Spanish words used in the text. The English-Spanish vocabulary includes many words that are not in the text, but that should be helpful. A rather complete list of idiomatic expressions has been given with particular attention to those used in Mexico. A very large list of words alike, or almost alike, in spelling, and alike in meaning in at least one acceptation is included in order to assist the advanced student in enlarging his vocabulary, and also, to show the great similarity of the two languages.

GARAGIOLA, JOE. *Baseball Is a Funny Game.* Philadelphia 5: J. B. Lippincott Company, E. Washington Square. 1960. 192 pp. $2.95. What goes on in the clubhouse? What happens during those meetings at the mound? What's it like to be a ballplayer's wife? How can a groundskeeper give the home team the edge? The author is uniquely qualified to tell you. For several years a major league catcher, Joe is now a sportscaster with the St. Louis Cardinals. He is also regarded as tops among M.C.'s who work the banquet circuit.

GARDNER, MARTIN, editor. *Mathematical Puzzles of Sam Loyd.* New York 14: Dover Publications, 180 Varick Street. 1959. 200 pp. $1. In this present volume, Martin Gardner, well-known editor and author of many science and puzzle books and articles, offers a choice selection of the best mathematical puzzles of Sam Loyd, taken from a long out-of-print Cyclopedia, each one edited for accuracy and clarity, but in such a way as not to sacrifice the unique style and historical flavor of the originals. Many of Sam Loyd's most famous puzzles are included here, such as his "14-15" puzzle which became a national craze, and his "Horse of a Different Color," which sold by the millions. In all, 117 of his most ingenious posers are included, complete with, the more than 120 line drawings and diagrams with which they were originally illustrated.

GASSNER, JOHN. *Masters of the Drama.* New York 14: Dover Publications, 180 Varick Street. 1960. 921 pp. $5.95. 40,000 additional words—including a comprehensive chapter on the post World War II drama—makes this the only up-to-date American history of world drama available. Among new and recent playwrights whose works are discussed are Arthur Miller, Christopher Fry, Tennessee Williams, T. S. Eliot, Garcia Lorca, Paul Claudel, Jean Giraudoux, Jean-Paul Sartre, and other Existentialist writers. New material on such older dramatists as Musset and Marivaux has also been included. The entire book has been thoroughly revised.

GOETHE. *Egmont.* Great Neck, New York: Barron's Educational Series, Inc., 343 Great Neck Road. 1960. 120 pp. 95¢. The situation in this 5-act tragedy is that of the rebellion of the Netherlands against Spain.

GOREN, C. H. *The Elements of Bridge.* Garden City, New York: Doubleday and Company, Inc. 1960. 439 pp. $3.95. In this Tutor Text, the author, the master player and teacher of the world of bridge uses a remarkable new "teach-yourself" method to explain the fundamentals of contract bridge—playing and bidding. Not only is the teaching method entirely new, but this book is the first of the several Goren bridge books to discuss the truly basic aspects of the game—introducing bridge to the person who may never have even watched a game. From the bridge deck to the play of the hand, this Tutor Text quickly teaches in such a detailed and fascinating way that even the regular bridge player will find it an extremely valuable refresher course.

GOTTLIEB, GERALD. *The First Book of The Mediterranean.* New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1960. 60 pp. $1.95. The author tells the story of the Mediterranean Sea, from the days when ancient man first set out from its shores in frail little barks until the present, when luxurious tourist ships and diesel-powered cargo boats cross its waters.

GRANT, BRUCE. *American Indians Yesterday and Today.* New York 10: E. P. Dutton, 300 Park Avenue, South. 1960. 352 pp. $4.95. The result of painstaking and exhaustive research, this alphabetically arranged encyclopedia is designed as a comprehensive reference work as well as a history of the American Indian from the time of the discovery of America to the present day. Each carefully cross-indexed entry is an exciting tale in itself of the lore and the legends, the beliefs, the tools, the customs, and the characteristics of all known tribes.

GRAVES, JOHN. *Goodbye to a River.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1960. 307 pp. $4.50. In 1957, the author heard the Brazos River would be dammed, drowning much he remembered. And so he took a belated canoe trip on it, alone, to bid it farewell. The book is a narrative of that trip—three rain-soaked, wind-driven autumn weeks, bucking rapids, scraping sudden rocks, making and breaking camp. Every rare gift of blue-golden weather, every bird cry, every tale of violence and pride are remembered with the keeness of the last goodbye.

GREELY, A. W. *Man Against the Elements.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 191 pp. $2.95. General Adolphus Washington Greely was ninety-one years old when President Franklin D. Roosevelt awarded him the Congressional Medal of Honor for heroism in the Civil War, for developing the U.S. Signal Corps, for his relief work during the San Francisco earthquake. On a meteorological expedition to the Arctic, he spent the most harrowing years of his life on a gallant mission that brought him international fame.

GUBITZ, M. B. *Rocketship X-15.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 288 pp. $4.95. This story is the first day-by-day account of the operation of the X-15. Based on personal observations and interviews at Edwards Air Force Base, it covers the four-day countdown leading up to and climaxed by an actual flight of the X-15. This countdown will be repeated many times until the day, sometime in 1961, when the X-15 makes its maximum stress flight—and history—by carrying a man to an altitude of one hundred miles, subjecting him to tremendous G-forces and to the totally unique and unknown experience of flying under a no-gravity condition for as long as three minutes.

HALPERIN, D. A. *Building with Steel.* Chicago 37: American Technical Society, 848 East 58th Street. 1960. 255 pp. (7" x 10"). This book is based primarily on several courses taught by the author. In one volume, all phases of steel construction are presented—from the initial design through shop fabrication, including two full chapters on detailing and a chapter on erection procedures of both structural and prefabricated components.

Continuity of the material throughout is enhanced by studying one hypothetical framework of a multistory building, although variations on this framework are introduced where necessary. Attention is given to aesthetic as well as functional and economic principles. Alternate procedures of design and construction are also presented.

The fourteen chapters of the book are grouped into three sections—Design, Detailing, and Erection. The design section may be studied successfully by anyone with a knowledge of simple algebra. Undeniably, some knowledge of statistics and strength of materials would be helpful, but this is by no means mandatory. A brief review of these two subjects is given in Chapter One. Throughout the first section *forces* and *force couples* are emphasized rather than *stresses*, since the former concept seems easier to grasp visually, lessening the tendency to rely too much on formulas.

HARLOW, W. M. *Trees of the Eastern and Central United States.* New York 14: Dover Publications, 180 Varick Street. 1957. 306 pp. $1.35. Treatment throughout this fascinating book is semipopular; it is neither a slight sketch, nor a monograph for the specialist. It is a middle-range book, carefully written for the intelligent reader who is sincerely interested in accurate information about trees.

With this book you will be able to identify at sight almost any tree you are likely to encounter, not only by group, but also by species. You will be able to tell a sugar maple from a Norway maple, a black oak from a white oak, a horse-chestnut from a chestnut. You will know which trees have edible fruit, which are suitable for house plantings; what climate and drainage conditions trees need, and much other useful and interesting information.

HELFMAN, E. S. *Water for The World.* New York 18: Longmans, Green and Company, Inc., 119 West 40th Street. 1960. 223 pp. $3.75. The abundance or scarcity of water has changed the lives of whole peoples and sometimes the course of history. The miracles of water have gone deep into men's consciousness, affecting their thinking, the philosophies they developed, and their writing. The Psalms of the Old Testament, the Koran, the rain dances of our Indians all testify to this. Here is the part water played in the lives of early peoples, the symbolism of water over the years in ceremonies and in ways of thinking, the use of land and water in ancient times. But water is also a major concern of modern man. Is there a sufficient supply for all?

HENRY, MARGUERITE. *Guadenzia, Pride of the Palio.* Skokie, Illinois: Rand McNally and Company, 8255 Central Park Avenue. 1960. 240 pp. (6½" x 9½"). $3.95. This book is a true story of the Palio—a thrilling, heart-stirring tale of a boy and a beautiful half-Arabian mare who won undying fame. The author tells how the life of Giorgio Terni, a boy of the Maremma marshes, became linked in strange and dramatic fashion with that of the cart horse Guadenzia, whose Arabian blood brought her into the contest of the Palio. When Gaudenzia is lamed in one of the wild races, it is Giorgio whose

devoted care brings her back to health. And it is Giorgia who has the joy of riding her to victory in one Palio, and then the heartbreak of fighting her in the next. How he wins the title "Vittorino" and how Gaudenzia becomes the "Pride of the Palio" make a story to enthrall the heart of every reader.

HEYERDAHL, THOR. *Kon-Tiki.* Skokie, Illinois: Rand McNally and Company, 8255 Central Park Avenue. 1960. 165 pp. (8" x 11"). $4.95. No one, young or old, who thrills to tales of brave and daring men should miss the experience of reading this book. In this new, specially designed edition, the text has been expertly edited for quicker reading—but without any loss of essential material or change of style. Scores of photographs, drawings, charts and diagrams—many hitherto unpublished and over 70 in color —add reality to the book.

On a primitive raft which they made themselves, and named Kon-Tiki in honor of a legendary sun-king of the Incas, Thor Heyerdahl and five companions deliberately risked their lives to show that the ancient Peruvians could have voyaged 4300 miles across the Pacific to Polynesia on similar craft. Experienced sailors and scientists unanimously predicted disaster. The raft would be destroyed in the first storm, they said; it would come to pieces or become water-logged and sink; the men would drown or die of thirst; and starvation.

But Heyerdahl held firmly to his belief, supported by years of scientific research, that the Indians of Peru had made such voyages successfully in the past. He was determined to duplicate their feat—not a mere stunt, but as a scientific test of his theory.

HIRSHBERG, AL. *The Eddie Mathews Story.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. It has been said of many baseball stars that they were "born with a bat in their hands," but few major leaguers have come close to this actuality or have a richer heritage of baseball than Eddie Mathews, star first baseman for the Milwaukee Braves. Under the watchful eyes of his father and grandfather, Eddie was swinging a bat when he was three, and even his mother was pressed into service as an outfielder to catch his early efforts at hitting.

HOFSTADTER, RICHARD; WILLIAM MILLER; and DANIEL AARON. *The American Republic,* Volume I. Englewood Cliffs, New Jersey: Prentice-Hall, Inc. 1958. 736 pp. $7.25. This volume covers American history up to 1865. The former college text, *The United States: The History of a Republic,* has been revised and appears in two volumes under the title of *The American Republic.* New chapters in this Volume I include a detailed discussion of the West before the American Revolution, full chapters both on the critcal period and on the making and meaning of the Constitution, a study of the reluctant involvement of each side in the Civil War. Throughout the authors have reassessed what they had written in the original text and, as a result, revised much of it. More interpretation and more factual and illustrative material have been introduced. The book is composed of 20 chapters: An Expanding World, Settling America, Colonial Society, The Mature Colonial Mind, The World and the Wilderness, The American Revolution, The Critical Period, The Constitution, The Federalist Decade, Jefferson in Power, The National Focus, Toward a Sectional Economy, The Jacksonian Era, America in Ferment, Headlong to the Pacific, The Southern Nation, The Expansive North, A Violent Decade, Civil War, and Union Restored. Also included are

an appendix and an index. The book also contains many pictures, maps, and illustrations.

———, ———, ———. *The American Republic, Volume Two: Since 1865.* Englewood Cliffs, N. J.: Prentice-Hall, Inc. 1959. 701 pp. $7.25. The book is more than an enlargement in two volumes of the authors' earlier work, *The United States: The History of a Republic* (1957). They have, of course, taken advantage of the greater size and scope of this version to add many new chapters. But they have also welcomed the opportunity to reassess what they wrote two years ago and to revise much of it. They have also made use of the additional space to introduce more interpretation as well as more factual and illustrative matter, and thus to do better justice to the complexity of American history. In addition, they hope they have continued to be responsive to new scholarship and new thought, which has been abundant in recent years. The new chapters in Volume I include a detailed discussion of the West before the American Revolution, full chapters both on the "critical period" and on the making and meaning of the Constitution, a re-examination of Jefferson in power, and a study of the reluctant involvement of each side in the Civil War. In Volume II their new chapters include fresh studies of the immigrant in an industrial society, and of the labor spectrum, white-collar and blue-shirt; a thorough re-examination of the farmer's protest; and two chapters on the twentieth century—one on the literature of our times and one on the contemporary economy. Those chapters that have profited most from revision and extension include their discussion of such political landmarks in American history as the Federalist decade, Jacksonian Democracy, the sectional controversy before the Civil War, the Progressive Era, and the New Deal.

This book begins with the Reconstruction period after the Civil War and brings history up to the present day. This period is covered in 20 chapters under the following titles: Reconstruction and the South; National Progress and Politics; Taming the West; Political Drift in the Gilded Age; An Industrial Nation; The Immigrant Leaven; White Collar and Blue Shirt; The Farmer's Protest; The City; Minds in Transition; Beyond Continental Frontiers; The Progressive Era; The First World War; From Normalcy to Depression; Writers and the Modern World; The New Deal; From Isolation to Global Conflict; The Economic Breakthrough; Mass Leisure and Mass Culture; The Epoch of the Cold War. Also included are: an appendix, an index, maps, pictures, suggested readings, charts, and other teaching and learning aids.

HOLBERG, R. L. *Take It Easy Before Dinner.* New York 16: Thomas Y. Cromwell Company, 432 Fourth Avenue. 1960. 130 pp. $3.50. This new edition has been extensively revised and enlarged to include over 75 new recipes, making full use of new products and providing hearty, delicious, and economical meals. All the directions given in the recipes are clear and simple, presupposing no knowledge of cooking. Measurements are given in detail, and cooking times are explicit. Nothing is left to chance. The recipes are grouped according to their main ingredients—fish, meat, or vegetables. There are separate sections for breads and simple desserts, too.

HOPKINS, J. G. E., and J. T. ADAMS, editors. *Album of American History 1917-1953.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 416 pp. (7¼″ x 11″). $12.50. As the volume opens, American soldiers are going to a war in France; at its close, our men are engaged in war in Korea, and General Dwight D. Eisenhower is taking office as President—but

the emphasis and point of view are by no means limited to wars or the rumors of wars. The focus of this book is the American people—their character, customs, amusements, achievements, and the changing face of the land they live in.

Here the reader may see history in process as the idealism of 1917 shades off into the disillusion and cynicism of the 1920's and dreams of a boundless prosperity are rudely broken by the Great Depression. Here are the personalities and achievements of the "New Deal" and the story of a struggle with adversity which is still a poignant memory to many living Americans. Here also are the positive gains made in the years of the locust—the great advances in technology and pure science, the rise of new industries and the recovery of the old, a belated concern with conservation of the land itself, and the progress of literary and artistic ambition.

HOWARD, LISA. *On Stage Miss Douglas.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 190 pp. $2.95. At nineteen, Ellen Douglas was obsessed by the dream of becoming an actress. She knew that such a career was precarious, that few girls ever achieved stardom, but she was prepared for all the risks. In her heart she felt that she had talent, but she needed the best dramatic training available. When she was accepted by the Rudley Theatre Workshop near Hollywood, she was assured an excellent education. Failure would be strictly her own fault.

HUME, R. F. *Florence Nightingale.* New York 22: Random House, 457 Madison Avenue. 1960. 192 pp. $1.95. How was this remarkable girl able to overcome the opposition of her family and Victorian society in order to enter nursing? How did it happen that she saved thousands of lives during the Crimean War, bringing order to the chaos of the British Army's medical service? How did she develop into the founder of modern nursing, the influential adviser to statesman, the "Lady With a Lamp" beloved by millions?

HYDE, M. O. *Animal Clocks and Compasses: From Animal Migration to Space Travel.* New York 36: McGraw-Hill Book Company, Inc., 330 West 42nd Street. 1960. $2.95. What triggers bird migration and what points the way? Why does a woodchuck hibernate? The language of the bees, the journeys of whales, the migration of turtles, and the ways of many other creatures of the animal kingdom show an amazing sense of time and direction. Even human beings seem to have internal clocks. Will these clocks run more slowly when men travel in space at near the speed of light? There are many pieces to the puzzle of animal clocks and compasses. Science projects are included for those who want to experiment. Many detailed diagrams and illustrations complement the text.

Indians of the Americas. Washington 6, D. C.: National Geographic Society. 1958. 432 pp. $7.50. Whooping, hard-riding Sioux massing to annihilate Custer . . . hideously painted Iroquois falling upon a peaceful settlement to burn, kill, and scalp . . . today's Pueblos making blankets, pottery, and ornaments . . . such familiar Indian figures move across these 432 captivating pages. Here presented however is a much broader picture from the 25,000-year span of the aboriginal American.

The pattern of these peoples is as varied as the arctic snows, deserts, plains, woodlands, mountains, and tropic jungles in which they lived. The American Indian was many things: skilled agriculturist whose staircase farms climbed with Gargantuan steps into Andean clouds . . . astronomer . . . nomad . . . architect . . . weaver . . . artist, potter, priest, and poet. He was an engineer

who bridged mountain chasms, built 10,000 miles of South American roads rivaling those of Rome . . . he was a skilled general like Chief Joseph of the Nez Perce, whose 1,000-mile retreat compares with Xenophon's strategic masterpiece. The Indian was emperor, legislator, witch doctor, dramatist, and gifted orator.

The fabled Atlantis pales before this "lost world"—two continents, sealed off for millenniums from other mankind and written history. Its story is as exciting, as full of wonder and surprise as any visions of spectral cities on the ocean floor. In this book our lost world rises again in vivid word pictures and 262 full-color paintings and photographs.

Here is history come to life. The first ice-age "Columbus" ventures across the land bridge from Asia to Alaska. He moves south, hunts the giant ground sloth, mighty mammoth, and American camel. Centuries come and go. Great white Maya temples rear above the jungle green of Yucatan. "Skyscraper" Pueblo towns rise in New Mexico. In the Mississippi valley men build huge earth temple mounds to worship the sun.

Into this world of glittering empires, theocracies, simple tribes, clans, and federated nations comes the white man. The lost continents are discovered; their way of life is started toward extinction. But today the Hopi still fashions pottery—for sale; the Eskimo still poises his harpoon at the seal's breathing hole in arctic ice, while descendants of Mohawk warriors rivet girders at dizzy heights above Manhattan canyons. This volume stems from the *National Geographic Magazine* and more than 25 National Geographic Society archeological and anthropological expeditions, ranging from Cape Horn to the Arctic.

JOHANSEN, M. A. *From Sea to Shining Sea.* New York 18: Ives Washburn, Inc., 119 West 40th Street. 1960. 241 pp. $3.95. Here is the story of American family life from the time of the first settlers up to the present told with careful accuracy in an informal, entertaining style. The book divides the approximately 350 years since the settlement of St. Augustine into twelve periods of history. Within each period, life is described in terms of our clothes, houses, medical and surgical treatment, education, transportation, food, books, songs, entertainment, and family customs. From transportation by horse to jet planes, from guttering saucer lamps to fluorescent lighting, from muskets to hydrogen bombs, from the one-room school to the latest in progressive education, from the medicine show to *My Fair Lady*, the exciting flow of America's developing mores and culture is detailed.

JONES, G. C. *Parents Deserve To Know.* New York 11: The Macmillan Company, 60 Fifth Avenue. 1960. 205 pp. $3.95. This is a parent to parent, heart to heart talk about the things that matter most in American family life today. Every portion of the book has been "road tested" in the real life experience of 200 carefully selected couples from the various states, dozens of clergymen, marriage counselors, and social workers. After twenty-five years of personal counselling experience, and extensive reading of the published material in this field, the author directs reader attention to the fifteen areas of greatest immediate concern to the modern parent.

JONES, V. C. *The Civil War at Sea—Volume One: The Blockaders.* New York 17: Holt, Rinehart, and Winston, Inc., 383 Madison Avenue. 1960. 509 pp. $6. Against a backdrop of the over-all war, Mr. Jones presents some of the most thrilling sea adventures that our country has ever experienced. Authoritative and comprehensive, this account draws the reader into the heart

of events and provides him with a vivid picture of the daring and unsuccessful attempts to provision Fort Sumter; the North's efforts to blockade 3,549 miles of coast with 90-odd vessels; the South's acquisition of the Norfolk Navy Yard and its enormous supplies, including the steam frigate *Merrimack*; "piracy" on the Potomac; the battles for Hatteras and Port Royal; Wilke's seizure of Confederate Commissioners Slidell and Mason on board H.M.S. *Trent;* Grant's capture of Fort Henry with the aid of Foote's naval force; and Union victories at Fort Donelson and Roanoke Island. The reader will follow these exciting chapters from our past as though they were happening now. *The Civil War at Sea* is Volume I of a 3-volume narrative history of naval operations during the Civil War.

JOY, C. R. *Desert Caravans.* New York 16: Coward-McCann, 210 Madison Avenue. 1960. 121 pp. $2.75. Once the desert was a blank on the African map, decorated by drawings of elephants. Today the decorations are oil rigs. A new kind of Saharan map is being drawn. It shows what lies under the treacherous sands. We watch prospectors grow desperate as every oil well they sink proves to be dry. Then—after 28 fruitless efforts—the great cry "It's oil!" bursts from a crew around a gusher. After reviewing its past and present, the author previews the Sahara's future. The daring vision includes an inland sea to restore the ancient fertility of the desert.

KLEIN, WILLIAM. *Rome.* New York 22: The Viking Press, Inc., 625 Madison Avenue. 1960. 191 p. $8.95. Here is Rome, in an exciting new book. Here is holy Rome and wicked Rome, noble Rome and bourgeois Rome, sublime Rome, seedy Rome, Rome in love and Rome starving, haunted Rome, living Rome and dying Rome—all the drama of the eternal city and its no less eternal people, played on history's most extraordinary stage. Here are old and new ruins, Parioli and shanty-towns, Aida in Caracalla's Baths, Sundays at Ostia, Ash Wednesdays, Good Fridays, visions, miracles, and saints, Ben Hur, Miss Italia, Zampano, and Mussolini, Old Guard Republicans and Neo-Fascists, commendatore, consuls, cardinals, artists, dealers, starlettes and pilgrims, barbers and pimps, princes and producers. Here is Moravia's Rome, Fellini's Rome, Stendhal's, Caesar's, and Michaelangelo's. Here is Sophia Loren's Rome—and here is the author's Rome.

KRAUS, RICHARD. *The Family Book of Games.* New York 36: McGraw-Hill Book Company, Inc., 330 West 42nd Street. 1960. 191 pp. $3.95. Here is a complete guide to games every member of the family can play and enjoy —indoors and out, at home or on vacation. This book offers more than 300 games, stunts, tricks, and puzzles for family fun and for scout, school, and church activities.

KROEBER, ELSBETH; W. H. WOLFF; and R. L. WEAVER. *Biology.* Boston 16: D. C. Heath, 285 Columbus Avenue. 1960. 654 pp. $5.32. This 1960 edition presents the subject biology in a sequence that is both seasonal and logical—with an emphasis on the out-of-doors that is particularly appealing to the high-school student. Study of the plant and animal kingdoms develops from the simple to the complex. In four of the ten units emphasis is placed upon the biology of man and his relationship to other animals and to plants; in addition, a later chapter gives a "History of Man" that students should find fascinating. Numerous study aids are provided at the end of each chapter: What Have You Learned?—a thorough summary of the chapter material; Useful Words in Biology—a chapter vocabulary; Test Yourself—review questions of the chapter; Do It Yourself—student experiments based on the chap-

ter; Adventures in Reading—suggested books for outside reading. Other special features are an easy, informal prose style that makes the text adaptable for ninth-grade courses as well as for tenth grade; up-to-date coverage of development in space and radiation biology; a unit on conservation; an introduction on field trips; generous use of color for clarification, effective design, and vivid impressions of nature's own striking color schemes. Supplementary materials include: a *Teacher's Manual* (offering helpful suggestions for teaching procedures); a *Workbook* and *Laboratory Manual* with *Key* (providing questions and laboratory exercises to complement study of the text); and *Comprehensive Tests and Key* (thirty-eight tests based on the forty chapters of the book).

The 40 chapters comprising the book are organized into the following eleven units: How living things are alike; The many kinds of plants and animals; Plants the world's food makers; How our bodies work; Why we behave as we do; Bacteria and health; Reproduction; Heredity and environment; The history of living things; Conservation; and Radiation and space biology.

LADO, ROBERT, and C. C. FRIES. *English Pronunciation*. Ann Arbor: University of Michigan Press. 1954. 212 pp. This, another in the English series produced by the English Language Institute Staff of the University, is composed of exercises in sound segments, intonation, and rhythm. Upon completion of the thirty-five lessons of pronunciation, the student should have acquired a basic knowledge of the sound system in English, including intonation and rhythm patterns. Knowledge of the system, however, does not necessarily signify that the student can produce the sounds, intonation, and rhythm of English with complete accuracy. Actual practice on all the points of contrast in the system of English and also on those points which contrast with the native language of the student is continuously urged. By the use of the specific drills and exercises contained in all of these lessons, the student will finally obtain freedom in the pronunciation of the language; that is, he will be able to produce the language accurately and with ease.

LAIRD, D. C. and E. C. *Techniques for Efficient Remembering*. New York 36: McGraw-Hill, 330 West 42nd Street. 1960. 187 pp. $3.95. As the authors put it in their preface: "The aim of this book is to build some bridges which will connect the general reader with the research findings on remembering and learning . . . to boil this research down into a few general rules which provide guidance for self-improvement on remembering."

LEE, HARPER. *To Kill a Mockingbird*. Philadelphia 5: J. B. Lippincott Company, E. Washington Square. 1960. 296 pp. $3.95. The place of this enchanting, intensely moving story is Maycomb, Alabama. The time is the Depression, but Scout and her brother, Jem, are seldom depressed. They have appalling gifts for entertaining themselves—appalling, that is, to almost everyone except their wise lawyer father, Atticus. Atticus is a man of unfaltering good will and humor, and partly because of this, the children become involved in some disturbing adult mysteries: fascinating Boo Radley, who never leaves his house; the terrible temper of Mrs. Dubose down the street; the fine distinctions that make the Finch family "quality"; the forces that cause the people of Maycomb to show compassion in one crises and unreasoning cruelty in another.

LOCHNER, L. P. *Herbert Hoover and Germany*. New York 11: The Macmillan Company, 60 Fifth Avenue. 1960. 244 pp. $5. Perhaps no president of the United States has been the subject of more controversy than Herbert Hoover. All the philanthropic works he performed were at one time

practically ignored, while he was charged with being responsible for the fact that millions of Americans went hungry and jobless during the Great Depression. In later years the balance has been redressed and the picture of the former president that emerges from this book is very a different one from that previously held.

LORBERG, AILEEN. *Lookout Summer.* New York 16: Lothrop, Lee and Shepard Company, 419 Park Avenue South. 1960. 192 pp. $3. Vickie believes her happiness lies in becoming a concert violinist and does not care to be distracted by anything that interferes with this dream. Not even by Mike, the boy who wants to marry her when he gets through medical school. So it seems a heaven-sent opportunity when Uncle Jeff, a Forest Ranger, offers her a summer job as fire spotter in the beautiful Cascade Mountains. With nothing to do but guard the Douglas spruce trees, look through high-powered binoculars every forty minutes, report the weather data at sunrise and sundown, all the rest of the time was for her and her beloved violin.

LYTLE, ANDREW. *Bedford Forrest and His Critter Company.* New York 21: McDowell Obolensky, 219 East 61st Street. 1960. 402 pp. $5.95. At Appomattox, Robert E. Lee was asked who was the greatest soldier under his command. Lee answered, "A man I have never seen, sir. His name is Forrest." Earlier, when Sherman was driving to capture Atlanta, he wired the Secretary of War complaining that "Forrest is the devil," if it costs ten thousand lives and bleeds the Treasury. The author in this long-out-of-print book has succeeded in revealing what this genius was really like. In addition, he has overcome the even more difficult task of explaining why General Forrest was never given the major commands which might well have saved the Confederacy.

MACDONALD, Z. K., and V. J. AHL. *Nurse Todd's Strange Summer.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. As a registered nurse, Ann Todd knew the danger of becoming emotionally involved with a patient, but as a woman she couldn't help loving gay, charming Quint Towne. When he and his mother invited her to Maine to nurse him through his convalescence, she grasped the chance. This would be the summer of her dreams.

MAGILL, F. N., editor. *Masterpieces of World Literature in Digest Form,* Third Series. New York 16: Harper and Brothers, 49 E. 33rd Street. 1960. 1202 pp. $8.50. This book presents 500 new essay-reviews and plot synopses. Philosophy, poetry, and essays appear for the first time in this new series. Included is virtually every nonfiction work studied in high-school and college English and literature courses. Here are all the essays, philosophical works and poetry the student must deal with, along with contemporary and older novels and dramas. The breakdown by category is 277 novels and plays, 223 works or philosophy, poetry, and other classics. The range is from Hesoid to Samuel Beckett.

Vital as are the creative authors of fiction and drama—to which the First and Second series are devoted—they in no way overshadow the creative efforts of the philosophers, the poets and the essayists whose writings have also enriched the literary and intellectual heritage of mankind. It is to these nonstorytellers that much of the attention in the Third Series is directed.

Essay-reviews are employed for works of writers and thinkers like Francis Bacon, Burke, Carlyle, Cicero, Demosthenes, Donne Emerson, Horace, Hume, William James, Macaulay, Mill, Nietzsche, Petrarch, Plato, Spinoza, Villon,

Whitman, and scores of others whose principal works cannot be synopsized. The standard digest style of the first two series is still used for the novels and dramas in the Third Series.

Many late works are included, and many twentieth-century authors appear for the first time in the new series. Among the 260 newcomers are W. H. Auden, Samuel Beckett, Hilaire Belloc, James Gould Cozzens, Colette, Emily Dickinson, Isak Dinesen, Robert Frost, O. Henry, Gerald Manley Hopkins, Archibald MacLeish, Katherine Mansfield, Francois Mauriac, Margaret Mitchell, Dorothy Richardson, George Bernard Shaw, Dylan Thomas, William Butler Yeats, and many others.

MALKUS, ALIDA. *Blue-Water Boundary.* New York 22: Hastings House, 151 East 50th Street. 1960. 308 pp. $6.50. The conflicts of Iroquois and Huron, of white man and red, of Frenchman and Englishman, of Britisher and Yankee, are depicted through the long years when the region's destiny was being hammered out in blood and iron. The peaceful pursuits of commerce, navigation, mining, lumbering, and agriculture come in for their full share of attention, too, as the author shows how the peoples of Canada and the United States have worked to attain the common goals of peace and prosperity.

MALVERN, GLADYS. *Patriot's Daughter.* Philadelphia 2: Macrae Smith, 225 South 15th Street. 1960. 222 pp. $2.95. Although Anastasia has reached the age of marriage, she must follow the destiny of her father during her country's hour of crisis. The King of France is a prisoner in his own palace and the great Lafayette is confined in the prison of Olmutz in Austria by the Emperor. Anastasia, her sister, and her mother decide to make the dangerous trip to Austria so that they may be with the man who was once the hero of America and France. And young Charles de Maubourg begins his brave and patient attempts to restore the Lafayette family to freedom.

MANN, THOMAS. *Last Essays.* New York 22: Alfred A. Knopf, Inc., 501 Madison Avenue. 1960. 226 pp. $4.50. "On Schiller," the longest of the pieces assembled in this volume, has been called the most eloquent and moving of Mann's essays. In this commemorative address, Thomas Mann returned as an old man to a figure who had fascinated him when he was very young. Drawing on his won experiences in the sufferings and joys of creative living, he arrived at a new and often startling picture of the great poet. Schiller's problematic friendship with Goethe grows, in Mann's narrative, to be the very key to an understanding of his life and writings.

MATHER, BERKELY. *The Pass Beyond Kashmir.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 256 pp. $3.95. This story is laid against the background of present-day India and Pakistan and along the borders of Kashmir and Tibet. Few authors could know more about this territory, the local customs, peoples and forces at work, than Mr. Mather, who was a British Intelligence officer in the Far East for seventeen years.

The narrator is Idwal Rees, an Englishman born and brought up in the Far East. During World War II, he was an Intelligence agent for the British, and afterwards he continued to work as a freelance agent out of an office in Bombay. Agreeing to take on a job for another Englishman, he finds himself caught up in the machinations of big-money cartels and international politics —hunted down and heading north past Kashmir. Whether he will come back to Bombay in a coffin or on his own two feet is a question asked on every page.

MCCARTY, KRAMER. *Brenda Becomes a Buyer.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 191 pp. $2.95. Brenda Mason looked

forward to four exciting years at the University. All of her girl friends were going, but most important, Nicky Hanley would be there too. He was charming and wealthy, and they were in love. But her plans were abruptly shattered when her father became ill. She couldn't leave her mother during the crisis, and college would be financially impossible, for the first year at least. There were no two ways about it—she would have to get a job, though she had absolutely no training.

MCKENZIE, A. E. E. *The Major Achievements of Science*. New York 22: Cambridge University Press, 32 East 57th Street. 1960. Volume I. 384 pp. $5.50; Vol. II, 207 pp. $3.50. In volume I the author gives an account of the historical development of the main generalizations of science, their philosophical implications, and their influence on the climate of western thought. The second volume contains 91 extracts from original writings, arranged under the same chapter headings, to illustrate the author's theme. The extracts have been selected to be comprehensible to the general reader as well as to the science specialist and have been chosen for their liveliness and human interest as well as for their scientific value.

MCKOWN, ROBIN. *Janine*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 191 pp. $2.95. At seventeen, pretty Janine Forel, living in a remote French village, received the thrill of her life—a letter from an American girl her own age. Joan Weston had found her name through a committee to aid French war victims and wanted to be her friend. Joan not only wrote marvelous letters from Pennsylvania, but also sent food packages and the most glamorous clothes Janine had ever seen. Through months of correspondence, the lives of the two girls touched, merged, deepened into friendship.

MCNAMEE, M. B. *Honor and the Epic Hero*. New York 17: Holt, Rinehart and Winston, Inc., 383 Madison Avenue. 1960. 190 pp. $5.50. The author examines such renowned epic poems as the *Iliad*, the *Aeneid*, *Beowulf*, *The Faerie Queene*, and *Paradise Lost*, presenting new and interesting facets of *Aeneas* in the light of Cicero's ideal man and *Beowulf* in the light of medieval Christian and pagan thought. Thus he shows how the quality of human greatness is reflected in philosophy and in literature in every age, and how an understanding of philosophy can guide the reader to a truer and more meaningful interpretation of literature.

METALIOUS, GRACE. *The Tight White Collar*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 288 pp. $3.95. This is the story of Lisa and Chris Pappas and their struggle for acceptance by the small, snobbish, close-knit town of Cooper Station in northern New England. It is a story of men and women choked by the tight white collar of their own respectability and desperate to keep alive their own—and the town's—images of themselves.

Chris Pappas' appointment as teacher in the Cooper Station school is violently opposed by Doris Palmer, wife of a prominent citizen, who believes that Chris and Lisa know the real truth about her, a secret she has heretofore been able to conceal from everyone but the town doctor. Her opposition stirs up a bitter controversy that alters the lives of many in Cooper Station and leaves permanent effects on people like Nathaniel Cooper, scion of the town founder and owner of the mills; his brother Anthony, a successful novelist who finds in Lisa Pappas a summer's amusement; David Strong, the music teacher; Dr. Jess Cameron, a humanitarian, though not by choice; and most important of

all, Lisa Pappas herself, who thought the only way to achieve real happiness was by flouting convention.

MOOREHEAD, ALAN. *Churchill—A Pictorial Biography.* New York 22: The Viking Press, Inc., 625 Madison Avenue. 1960. 143 pp. $6.50. There have been many books on Sir Winston Churchill, from large biographies and studies of one aspect or another of his immensely varied life, down to books of pictures with virtually no text. But until now there has never been a book which combined text and pictures. The distinguished author of *Gallipoli* (which won him both the Duff Cooper Memorial Award and the *Sunday Times* Book prize), Alan Moorehead, has written a concise but full-length biography with illustrations specially selected to complement the text. For the first time a panorama of words and pictures, including many hitherto unpublished, matches the whole sweep of Churchill's life in all its extraordinary diversity—the life of a statesman, soldier, adventurer, journalist, politician, historian, orator, biographer, painter—the life of the greatest Englishman of his time.

MORENUS, RICHARD. *DEW LINE.* Skokie: Rand McNally and Company, 8255 Central Park Avenue. 1957. 184 pp. $3.95. DEW LINE—the story of America's best kept secret now can be told. This is the story of the three-thousand-mile Distant Early Warning line—America's electronic Paul Revere. Spanning the northern-most reaches of the North American Continent, it stands as an impregnable radar fence against large-scale attack across North Polar regions by enemy long-range bombers and fighter planes. DEW LINE is the dramatic account of how the almost impossible task of building this final link in the 10,000-mile warning loop around our country was accomplished.

MORRIS, R. B. *Great Presidential Decisions: State Papers That Changed the Course of History.* 1960. 413 pp. $7.50. This book includes the complete texts of thirty-four momentous documents—Presidential speeches, proclamations or messages to Congress—from Washington's proclamation upholding the supremacy of the law by putting down the Whiskey Rebellion to Eisenhower's call for universal disarmament. In the author's Introduction and his interpretation of each of the papers, not only the historical background, but also the personalities of the Presidents become alive and significant.

MULLER, C. G. *The Proudest Day: Macdonough on Lake Champlain.* New York 36: The John Day Company, Inc., 62 West 45th Street. 1960. 383 pp. $5.75. Neither on land nor at sea was the fate of the infant United States decided in their "Second War of Independence," but in the narrow reaches of Lake Champlain. There on a September morning in 1814, a few hastily built warships manned by a few hundred makeshift sailors under a handful of able and determined officers thrashed the best fleet England could launch at them, and the enemy's main hope was lost. The architect of that victory was Lieutenant Thomas Macdonough. This book is the first full account of both the action and the man.

In popular memory, Perry and the Battle of Lake Erie are far more vivid. Yet historians recognize Macdonough as the greater commander, the odds against him as longer, and his victory more decisive. To strike from Canada southward *via* Champlain and the Hudson Valley at the heart of the young upstart country was Britain's main chance; Macdonough saw this, and stopped her.

MUNVES, JAMES. *We Were There At The Opening of The Atomic Era.* New York 10: Grosset and Dunlap, Inc., 1107 Broadway. 1960. 176 pp. $1.95. Through Tony's experiences, every exciting detail of the most far-reaching scientific experiments of our time come to life—from the early discoveries to the release of the first atomic bomb, which was to bring World War II to a sudden and unforgettable close. This book recreates one of the most exciting and awesome moments in the history of the world—the moment both great and terrible that ushered in the Atomic Era.

NAGLER, A. M. *A Source Book in Theatrical History.* New York 14: Dover Publications, 180 Varick Street. 1959. 656 pp. $2.75. Here the student of the theater will find documents that are as well known as the Fortune contract or as Hazlitt's pen portraits of Kean's Gloucester, but also such recondite ones as the "Bios Aischylou" or the *Mercure's* description of Servandoni's sets. Some among the three hundred selections appear in English for the first time. Each excerpt is preceded by an introduction which serves to establish the chronology and to set the scene for the entrance of the source itself. Here are 25 centuries of stage history in more than 300 basic documents and other primary material.

NEAL, H. E. *Engineers Unlimited.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $3.50. Modern man is exploring outer space, has plunged to the depths of the sea in a bathyscaphe, and is now getting ready to drill a hole through the crust of the earth, beginning at the ocean floor. This proposed engineering feat recalls Jules Verne's story *Journey to the Center of the Earth,* and is the amazing brain-child of a group of young engineers working with the National Academy of Sciences—National Research Council. Their story of "Project Mohole" is only one of the exciting new frontiers that challenge young men and women now preparing for engineering careers.

NEVINS, ALLAN. *The War for The Union: The Improvised War 1861-1862.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 448 pp. $7.50. This account of the first year of the Civil War is much more than a merely military chronicle in which politicians stride on and off the stage. This volume, the first of four dedicated to the War, is a study of the transformation of a nation. The author is supremely conscious of the chaos that faced Lincoln on inauguration day, and well aware that confusion could not be finally routed before Appomatox. But the author is also positive that, in the opening months of the conflict, the first steps were taken to transform the loosely organized country that fretted over Bull Run into the firmly knit nation that emerged in 1865. The war was fought for a more perfect union, and this the reader is never allowed to forget.

No part of the background—political or military—has been slighted. Lincoln's emergence as the master of his cabinet is given its due importance; McClellan's dilatory tactics are exposed; and so is the struggle for power in Missouri. But always present is the theme of the transformation of the nation under the stress of the conflict.

————. *The War for the Union: War Becomes Revolution 1862-1863.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 573 pp. $7.50. The second year of the war is the subject of this—the sixth—volume of the author's ten-volume panorama of American history from the Mexican War through Reconstruction. It is also the second of the four volumes Dr. Nevins is devoting to the war itself.

This was the year of the bloody battles of Antietam and Chancellorsville. McClellan was frittering away the golden opportunities of the Army of the Potomac, while in the West, Grant was beginning to slug his way to victory.

This was also the year in which Lincoln, disheartened by the Border States' response to compensated emancipation, finally issued the Emancipation Proclamation freeing the slaves behind the Confederate lines. Bedeviled in Washington by the ambitions of the cliques behind Seward and Chase, he checkmated both men by obtaining—and not using—their resignations from the Cabinet. Abroad our ministers in France and England were struggling against misunderstanding in high places.

All this is in one volume. All this and more. While the campaigns and battles are given their due emphasis, as are the feuds in Washington, the author does not forget for an instant the vast social and economic developments which made war become revolution.

New Horizons World Guide. New York 17: Pan American, P. O. Box 1111. 1960. 576 pp. $2. All the countries covered in New Horizons are grouped into eight general areas taking in the entire world. Each area is introduced by a regional map, with countries arranged alphabetically. There's also an index listing more than 1,000 places covered in the *Guide*. For each country there's a map showing principal points of interest, a year round weather chart, and statistics on size and population. A summary of characteristics of each country will help the reader choose an ideal vacation spot. Then there's an alphabetical listing of more than three dozen subjects of inestimable value in planning a trip. Concluding the data on each country, sources of further information are given. It covers Europe, South America, Mexico, Central America, The Middle East, Bermuda, The Bahamas, The Caribbean, Asia, Philippines, Alaska, Hawaii, South Pacific, and Africa.

NOBLE, IRIS. *The Courage of Dr. Lister*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 191 pp. $2.95. In the mid-nineteenth century, Joseph Lister introduced the revolutionary principle of antiseptic surgery. Inspired by Pasteur's discovery of germs, he was the first surgeon to fight the invisible killers. He learned how to control the terrors of gangrene, pyaemia, and erysipelas, and brought about dramatic decreases in postoperative fatality.

NOLAN, J. C. *Spy for the Confederacy*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. During the Civil War, Rose O'Neal Greenhow was one of the South's great spies, directing a vast network of secret agents. The vital information she provided helped win the Battle of Manassas and led to Confederate victory at Bull Run. An unofficial ambassador for Jefferson Davis, she slipped through the blockade at sea to plead for help in England and France on a last, desperate mission.

O'BRIEN, BRIAN. *Ivory, Apes, and Jimibel*. New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 217 pp. $3.50. The fierce drama of big game hunting in Africa is a demanding school for young Jimmy Bell, and he is eager for his share of adventure. Joining his father in the Cameroun bush country, "Jimibel," as his native friends call him, is taught to live without weapons in the mighty trackless forest. He meets face-to-face with elephant, gorilla, leopard, and hippopotamus and learns to master them like a man. Here is all the lure and color of Africa—the merciless tropical rains, the blazing sun of the dry season, the dull thudding of the "talk drums," the humming and croaking and roaring of wild creatures acting out their own

dramas in the night. Among the Fang natives, Jimibel sees what honor can mean to a man, how far courage should take him, and how sound friendships can be despite the barriers of race and custom.

PEARE, C. O. *John Keats: A Portrait in Words.* New York 16: Dodd, Mead and Company, 432 Park Avenue South. 1960. 255 pp. $3.50. This is the story of John Keats: the orphaned hostler's son who felt like a father to his younger brothers and sister; the schoolboy who liked to watch rooks winging across the sky and search for wild flowers, at the same time becoming absorbed in the worlds created by Spenser, Shakespeare, and Milton; the youthful doctor's apprentice working in a London hospital, whose social hours were spent among writers and artists; the poet at last recognizing his destiny and pursuing his craft with dedication, by sonnet, narrative poem, and ode; the fluent letter-writer describing to friends and family his visit to literary salons or a walking trip through Scotland; the Romantic poet whose published verses were received enthusiastically by friends and violently attacked by Tory critics.

PERRY, JOHN and JANE GREVERUS. *Exploring the River.* New York 36: McGraw-Hill Book Company, Inc., 300 West 42nd Street. 1960. 205 pp. $3.50. Touring the river from its source to the sea, the Perrys investigate its path, "watershed," plant and animal life, geology, geography, and ecology. They show how and why plants and animals depend on each other and they explain the river's effect on industry, commerce, agriculture, urban development, and conservation.

Physics. Boston 16: D. C. Heath and Company, 285 Columbus Avenue. 1960. 666 pp. (7¼" x 10") $5.48. This new high-school text, developed by The Physical Science Study Committee of Educational Services, Incorporated, is the heart of one of the most significant educational developments of the century. It is an integral part of a unique course which includes laboratory guides, laboratory apparatus, films, achievement tests, and teacher's guides. The course represents a massive revision of conventional high-school physics programs, by a team of university physicists and high-school teachers who drew heavily on the vast resources of the educational and scientific communities. More than 650 schools over the last three years have used the course . . . over 35,000 pupils.

The new approach to physics is termed phenomenological. Beginnnig in the laboratory where they directly observe the behavior of matter and energy, the students learn to think and plan. They construct models, or theories, and they experiment. They actually experience the way in which the powerful ideas in physics were conceived, nurtured, and sometimes overthrown by even more powerful ideas. Here high-school students advance to a level of real insight.

This book is designed to help the student start from simple measurements of time and space and reach an understanding of the wave-mechanical explanation of the internal structure of atoms, the basis of modern physics. Physics is presented as a fundamental science and a unified whole. There are two essential sub plots.

One sub plot is the development of a concept of wave behavior, treated as part of the study of light. Here much careful experimentation includes the development of a particle model of light until it reaches its limitations and must be rejected. In this experience, the students are dramatically faced with the realities of scientific discovery. They then approach the behavior

of waves in a wave model of light with somewhat more insight and penetration.

The other sub plot in the course is the development of Newtonian mechanics. Here basic concepts are again developed slowly on an experimental background. The conservation laws of momentum and energy are stressed far more than usual. Against this background, electricity is introduced in a way that leads to the identification of the particles of which atoms are made. An inevitable return to a particle concept of light is required at a point where the student has new appreciation and understanding of the nature of both matter and light.

The synthesis of wave behavior and particle mechanics in describing the atom connects the sub plots and ends the course. Here the student again faces the basic concepts of time, space, matter, and motion—with an important new understanding.

The photography, conceived as a practical alloy of physics, is technically masterful, capturing the beauty and order of natural phenomena presented in the text. Spectacular and beautiful multi-flash and high-speed photographs are extensively used in this study of motion.

The text is simple in style. It reads much the way a good high-school teacher might speak—almost informally—to a small group of youngsters. The reader is intelligently talked to, questioned, shown . . . rather than written to or lectured to.

The laboratory guide actually does serve as a student's *guide* rather than a set of procedural directions—an emphasis that is one of the course's most important successes. Questions and analogies direct the student's thoughts toward discovery, but he is seldom told what to do.

More detailed directions and answers to questions are included in the teacher's guide. The teacher's guide is an unusually extensive amplification of the text. It is designed to assist the teacher in every possible way—academic, technical, communicative. Through the thorough and realistic help offered in the guide, the teacher can encourage the student to make his own discoveries and at the same time keep sound safeguards against wasting time on insignificant discussions or "tangents."

PITKIN, DOROTHY. *Wiser Than Winter*. New York 14: Pantheon Books, Inc., 333 Sixth Avenue. 1960. 317 pp. $3.50. Just as the chickadee in spring changes his song to a reedlike tune that is wiser than winter, so Kit Harris of Greenwich, Connecticut, changes from a mixed-up teenager to a mature young woman after a tumultuous winter in Vermont. In the beginning she was sure she had made a mistake in coming to Vermont—her first visit had been during a summer two years ago.

REID, CONSTANCE. *From Zero to Infinity*, second revised edition. New York 16: Thomas Y. Crowell Company, 432 Fourth Avenue. 1960. 161 pp. $3.95. This perennially popular book on the familiar digits from zero through nine now includes a brand-new, up-to-date chapter on infinite sets, a problem that puzzled mathematicians for centuries, but that only modern man and the electronic computer could resolve. This book is a lively discussion of one of the most fascinating subjects in the world—the natural numbers. Each digit has a story stretching back into antiquity. Each has a unique personality. All are interesting.

ROSENTHAL, M. L. *A Primer of Ezra Pound*. New York 11: The Macmillan Company, 60 Fifth Avenue. 1960. 56 pp. $2.50. The author—vigorous, controversial, and influential—has generally been the subject of

polemical debate. Comparatively his career and work does not avoid the issues of these discussions, but does concern itself chiefly with helping the reader discover what it is that gives Pound's poetry, early and late, its peculiar and original force.

ROSS, N. W. *Heroines of the Early West*. New York 22: Random House, 457 Madison Avenue. 1960. 192 pp. $1.95. From the diaries and letters of these brave women, we learn a great deal about what life was like during the long months of the western journey and the first years of hardship and loneliness on the farthest frontier. We also realize, as we read this fascinating book, that, if these female pioneers had not had the courage and the strength to travel thousands of miles across unknown land to set up housekeeping among wild animals and savage Indians, the United States might not be the size and shape it is today.

SAMACHSON, DOROTHY and JOSEPH. *Good Digging*. Chicago 80: Rand McNally and Company, Box 7600. 1960. 224 pp. $3.50. This book makes fascinating reading for young people, and for adults as well, and is, in addition, a liberal education in archaeology, in the sister sciences, and is also a "career" book. Its scope is broad, for nothing human is alien to a digger into the past. The emphasis is not merely on the romance of discoveries and their discovers—although it contains many stories of great finds made under incredibly difficult circumstances and of the fascinating characters who made them.

SARGENT, SHIRLEY, and HANNAH SMITH. *Three Names for Katherine*. New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. Life couldn't be more wonderful for Kay Mallicoat—she was a senior at high, the possible recipient of a dramatic school scholarship, and Vince, the most popular man on campus, was her steady. Then, without warning, everything exploded! Without even consulting her, it was decided she would spend her last school year in Colorado with her father, his second wife and three young children—none of whom she knew! Boiling with resentment at changing schools, giving up old friends and, most important, postponing her dramatic career, Kay knew she would hate every moment of her imprisonment.

SCHEALER, J. M. *The Sycamore Warrior*. New York 10: E. P. Dutton and Company, 300 Park Avenue South. 1960. 180 pp. $3.50. The sycamore warrior had stared into the musty darkness of an Egyptian tomb for centuries. Its discovery by modern archaeologists raised a puzzling question: Had this battered toy belonged to the great King Khufu, as the carved inscription would indicate? How, then, did it happen to be sharing the tomb of an unknown nobleman, who had lived and died twelve centuries after Khufu's reign in 2650 B.C.?

SCHIFFER, DON. *The First Book of Swimming*. New York 22: Franklin Watts, Inc., 575 Lexington Avenue. 1960. 65 pp. $1.95. Swimming is a healthful, rewarding sport for people of all ages. If you're a beginner, the book will teach you in easy-to-follow, step-by-step instructions. If you already know how to swim, it will give you many pointers that will make you a more proficient swimmer. Whether you're a beginner or not, you can start right now by practicing at home such things as the seven basic arm strokes, breath control, the different kicks. Then, when you do get into the water, you'll have a head start.

SELDEN, SAMUEL. *Shakespeare: A Player's Handbook of Short Scenes.* New York 11: Holiday House, 8 W. 13th Street. 1960. 219 pp. $2.75. This book is specially for the use of players who are discovering for the first time the interest and pleasure of Shakespeare in action. Here students of drama will have immediate access to our richest theatrical heritage, for they will find plenty of scenes they can act with understanding and effect. Here too is stimulating activity for English classes.

SHAPIRO, M. J. *The Gil Hodges Story.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. Stalwart, uncomplaining, quietly good humored and religious, Gil Hodges has won the respect and admiration of baseball men and millions of fans in the course of setting more than a dozen hitting and fielding records with the Brooklyn (now Los Angeles) Dodgers. Big and strong as a youngster, with muscles hardened helping his father around the Indiana coal mines, Gil's awesome power with the bat made him a star of American Legion ball, and in 1941 he won the playoffs with a dramatic eleventh inning home run.

SMITH, GOLDWIN. *The Heritage of Man—A History of the World.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 896 pp. with 41 maps and 125 illustrations. $12.50. At the beginning of this book, we peer through the mists of time towards our remote ancestor *Pithecanthropus erectus,* that strange, half-enigmatic figure standing at the portals of the timeless deep. Our forefathers are coming out of dark caves and striking fire from flint. They are grasping clubs and hurling spears. They are fleeing from the wrath and greed of their foes. Soon men of art and imagination will shape objects of beauty to warm their spirits against the chill blasts and the great night without.

In the twentieth century, all our days are filled with the triumphs of natural science. As we pursue happiness, health, and survival, the jet planes roar overhead and break the sound barrier with a double boom. Radio and television have become, we sometimes think, absolutely necessary parts of our daily lives. We respect and admire the engineer and the industrialist, the surgeon, the physicist, the chemist. These, surely, are the kinds of men who have made it unnecessary for us to leap from the leafy stalks in the jungles of Java or plait lianas by the Limpopo. The modern scientists, engineers, and men of business seem to us to be the creators of a new age, bold prophets of a tomorrow, we hope, will be bright. Let us add to our list the names of the poets, the mathematicians, the men of music, the artists. They, too, must have their honored place.

This book is a journal of certain experiences of mankind rebuilt out of the memory of the historian. It also contains more than a mere catalogue of memories because the author had consistently sought to stress the varying trials and problems of the human race and the particular ways in which men have met the challenge of their hour. The conflicts and questions about man and society, man and the cosmos, man and himself go very deeply indeed. The root of the matter is the ultimate purpose of man in the universe.

SNOW, C. P. *The Affair.* New York 17: Charles Scribner's Sons, 597 Fifth Avenue. 1960. 374 pp. $4.50. The story revolves around a case of scientific fraud. Charged with this, a young scientist has been dismissed from his academic post; and now, with the revelation that Donald Howard may be innocent, the Affair makes a moral and political crisis which splits the college from top to bottom. The case is re-opened, with Lewis Eliot in the crucial role of advocate for Howard. This central situation gives the author especially

fine opportunities for the exercise of his psychological wisdom and his dramatic skill. As the tension mounts over the Affair, he pins down the issues; he writes a study in justice.

SUTTON, FELIX. *Big Game Hunter.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. Carl Akeley, American naturalist, sculptor, writer, was the world's foremost big game hunter—not for sport, but for the enrichment of science. Pioneering in the field of taxidermy, he prepared wild animals for exhibition, and the Akeley African Hall in New York's American Museum of Natural History is a memorial to his genius. He was also a brilliant inventor, and the movie camera he created to photograph wild life is the prototype of all newsreel cameras used today.

SWEET, W. E. *Latin: A Structural Approach.* Ann Arbor: The University of Michigan Press. 1957. 530 pp. This book attempts to apply the findings of structural linguistics to Latin in the same way that Charles C. Fries has applied them to the teaching and learning of English as a foreign language. The course is built around 360 Basic Sentences, which not only illustrate all points of structure, but also serve as the basis for the Pattern Practices, which in turn give massive drill on these points. The Basic Sentences are *sententiae*, gathered from various centuries to give the student some idea of the vast scope of Latin literature. The Narrative Readings in many cases parallel the Basic Sentences in Language or thought. This book was written for teachers without previous training in structural linguistics who are dissatisfied with the traditional approach to Latin teaching and want to try something new.

TANNENBAUM, BEULAH and MYRA STILLMAN. *Understanding Light: The Science of Visible and Invisible Rays.* New York 36: McGraw-Hill Book Company, Inc., 330 West 42nd Street. 1960. 144 pp. $3. The scope of the material is wide—including the study of natural light (sunlight, starlight, moonlight), luminescence or cold light, ancient theories of light, the electromagnetic spectrum, the eye and its relation to light, artificial sources of light, and finally the newest uses of light as a source of energy in such devices as solar batteries and photo-electric cells. The book also points up the importance of the scientists throughout history who have contributed to our knowledge of light—giants such as Pythagoras, Galileo, Newton, Roemer, Hooke, Becquerel, Descartes, Maxwell, and Einstein among others.

TAVO, GUS. *The Buffalo Are Running.* New York 22: Alfred Knopf. Inc., 501 Madison Avenue. 1960. 216 pp. $3. *"Stampede! Buffalo stampede!"* The cry rang out the length of the wagon train. Under the swift direction of Old Amos, young David Duncan worked frantically to help split the herd stampeded by the Indians. Brought up on a frontier farm, this was David's first trip on the Oregon Trail. He had hoped for a chance to see a buffalo herd, but he had no idea that this stampede would change his life.

TAYLOR, PAMELA, selector. *The Notebooks of Leonardo da Vinci.* New York 22: New American Library of World Literature, 501 Madison Avenue. 1960. 253 pp. 75¢. The great mind of the Renaissance is revealed in this new selection from his famous notebooks. Includes 16 pages of drawings by da Vinci.

TEALE, E. W. *Journey into Summer.* New York 16: Dodd, Mead and Company, 432 Park Avenue. 1960. 376 pp. $5.95. And so in a mood of peace, a day's reflective pause that will set you quite apart from your busy civilized world, you will start on a long, leisurely journey into the natural

history of summer. You will become absorbed in the ways of mayflies and prairie dogs, you will learn about ladyslippers and woodpeckers, about falling stars and fossil dragonflies; you will wander among the flowers of high mountain meadows and see the richness of life in swamps; you will visit twenty-six states, meandering from the White and Green Mountains of the East to the Rockies of the West. Your route on the map will look as aimless as would the seasonal wanderings of a deer. Your one purpose is to go from one wild place to another across our broad land in search of almost anything you can see, and a great deal that, without the author, you probably never would see. Altogether it makes as pleasant a summer as you have ever spent.

TERRES, J. K. *The Wonders I See.* Philadelphia 5: J. B. Lippincott Company, E. Washington Square. 1960. 256 pp. $5. How do butterflies fight? Or a squirrel and a starling "talk" with each other? Or ants make slaves of other ants? In this book, naturalist John K. Terres describes many such fascinating encounters . . . true stories selected from his own journals over the last eight years . . . stories that give dramatic proof of the intuitive cleverness and courage of wild creatures and sharpen the reader's eye for discoveries of his own.

THOMAS, HENRY. *Copernicus.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 192 pp. $2.95. Regarded as the founder of modern astronomy, Copernicus was one of the most versatile geniuses of the sixteenth century—astronomer, physician, churchman, soldier, and philosopher. He defied the thinkers of his day and inspired one of the great revolutions in human thought. Overthrowing the age-old belief that the earth was fixed at the center of the universe, he established the theory that the earth rotates daily on its axis and the planets revolve in orbits around the sun.

THOMAS, SHIRLEY. *Men of Space.* Philadelphia 39: Chilton Company-Book Division, 56 and Chestnut Streets. 1960. 265 pp. $3.95. Who are the men of space? What are they like, these men who are making tomorrow's history today? Like figures of mystery, they think and plan in a world only recently snatched from the realm of Buck Rogers. Our destiny may be hinged to their computations. The solar system is no longer a nebulous phrase—charts criss-cross its expanse and time-tables have put space exploration on a schedule. In these ten profiles, the first in a projected series, Shirley Thomas gives us an intimate picture of men who are legends in their own time: Krafft A. Ehricke, Robert H. Goddard, Bernard A. Schriever, John Paul Stapp, Konstantin E. Tsiolkovsky, James A. Van Allen, Wernher von Braun, Theodore von Karman, John von Neumann, and Charles Yeager.

TOMPKINS, W. A. *CQ Ghost Ship!* Philadelphia 2: Macrae Smith Company, 225 S. 15th Street. 1960. 192 pp. $2.95. Radio ham Tommy Raockford, all set for a carefree vacation with his favorite uncle, finds himself privy partner in a risky adventure before they even touch the shore of Washington State. Uncle JC, an investigator for the Neptunian Marine Casualty Insurance Company, faces the toughest assignment of his career in helping the FBI locate the master transmitter for a cleverly planned system of ship robberies—and he has chosen seventeen-year-old Tommy, with his amateur radio experience, as his Number One helper.

TOWER, M. E. *Flight Facts for Private Pilots.* Los Angeles 26: Aero Publishers, Inc., 2162 Sunset Boulevard. 1960. 216 pp. (7½" x 10¾"). Hard binding, $5; heavy paper covers, $3.50. Here is an easy-to-understand coverage of all the fundamentals of flying that a pilot must comprehend before

he can obtain his private pilot's certificate (or license) as issued by the Federal Aviation Agency. More than 250 photographs and drawings aid in the explanation of subjects like theory of flight, airplane control, take-off, cruising, landing, structures, powerplants, flight preparation, weather and how to use it, how to navigate, radio navigation, cross-country flying, instruments, and attitude instrument flying. A helpful glossary of aeronautical terms is also included. This modern ground school text is a companion to the book entitled *Civil Air Regulations and Flight Standards for Pilots* that contains air rules, pilot requirements, examination information, illustrated aerial maneuvers, a typical written examination for private pilots, *etc.*

The Trachtenberg Speed System of Basic Mathematics. Garden City: Doubleday and Company, Inc. 1960. 270 pp. $4.95. The Trachtenberg method employs arithmetical procedures radically different from the conventional methods with which we all have long been familiar. For example, there are no multiplication tables and no long division as we know it. To add long columns of numbers we need not count higher than eleven. In fact, one needs only to be able to count to eleven in order to master the entire Trachtenberg system. Based on a series of simplified keys, the method is amazingly effective and easily grasped. Once mastered, its benefits are greater speed, greater ease in handling numbers, and greater accuracy.

TURNELL, MARTIN. *The Novel in France.* New York 22: Vintage Books, 501 Madison Avenue. 1958. 472 pp. $1.25. (paperback). A discussion of some of the outstanding French novels and their authors.

VAN DOREN, MARK. *John Dryden, A Study of His Poetry.* Bloomington, Indiana: Indiana University Press. 1960. 310 pp. $1.75. a paperback. The author opens the door to heightened appreciation of Dryden, and—through him—of all English verse. His study has remained the most stimulating, wise, and penetrating analysis of the art of this major English poet. Writing with obvious pleasure, he provides an evaluation of the great poet's work which exhibits him at his best and also at his worst. The second chapter discusses ways in which Dryden went wrong, and finds those ways interesting for the reason that he, like most major writers, was capable of bad taste.

WARD, BARBARA. *Five Ideas That Change the World.* New York 3: W. W. Norton and Company, Inc., 55 Fifth Avenue. 1960. 188 pp. $3.75. The author begins her book with an examination of the real center of power in the world today: the nation-state. Tracing the history of the theory and practice of nationalism, she reveals its potentialities for good and evil and shows how it changes and is changed by the other four basic ideas that change the world. These four are industrialism, colonialism, communism, and internationalism, which are here considered in their impact on East and on West and on uncommitted nations. In conclusion the author suggests the touchstones of a policy that we should pursue in search of a livable world for us and all mankind.

WARE, J. R., translator. *The Sayings of Mencius.* New York 22: New American Library of World Literature, 501 Madison Avenue. 1960. 173 pp. 50¢. Contains the wisdom of the great Confucian disciple whose words are as meaningful today as they were 2,000 years ago.

WATSON, J. W. *Dinosaurs, and Other Prehistoric Reptiles.* New York 20: Golden Press, Inc., 630 Fifth Avenue. 1960. 64 pp (10" x 12"). $3.99. Practically no other subject fascinates the youngster more than the monsters who roamed the earth in prehistoric times. Parent, librarian, and teacher have

seen the look of interest, excitement and intellectual curiosity on the face of the child when he first discovers dinosaurs. Now available in a dramatically illustrated book tracing the history of the awesome animals which lived 300 million years ago and disappeared long before the world became inhabited by the creatures we recognize today. A special section is devoted to fossil hunting from 1800 to the present time—with emphasis on the resurrection and preservation of these remains in museums. Indexed with a guide to pronunciation, the book appears in Goldencraft Library Binding.

WHITE, DALE. *Bat Masterson.* New York 18: Julian Messner, Inc., 8 West 40th Street. 1960. 191 pp. $2.95. Billy Masterson was raised on the Kansas frontier. At eighteen, bored by farm work, avid for excitement, he joined a hunting expedition up the Salt Fork of the Arkansas. This was Indian territory, forbidden to white men. Billy longed to hunt the swarming buffalo, but his boss considered him a greenhorn kid, fit only for menial jobs. He practiced marksmanship, determined to become a crack shot, but his dream seemed hopeless. Then Wyatt Earp taught him to use a six-gun and to speed up his draw. From that chance meeting, Billy's destiny changed; he was caught in a web of drama that shaped the history of the West.

WHITE, ROBB. *Up Periscope.* New York 36: Scholastic Book Services, 33 West 42nd Street. 1960. 220 pp. 25¢. The story of a submerged submarine and a Japanese ship overhead.

WILLIS, P. D. *Jory and the Buckskin Jumper.* New York 10: St. Martin's Press, 175 Fifth Avenue. 1960. 230 pp. $3.50. Here, for the delight of every young reader, is the story of how a 4-H Club actually works, how horses are trained and how they show, and how and why prizes are awarded at livestock exhibitions. This is a familiar, delightfully depicted world for those who know and love the country—a special treat for city boys and girls.

Pamphlets for Pupil-Teacher Use

Alcohol Education in the Private Schools. New York 17: The Christopher D. Smithers Foundation, Inc., 60 East 42nd Street. 1960. 14 pp. Reports symposium in which 15 private schools participated.

Annual Youth Development Center Report. Syracuse 10: Youth Development Center, Syracuse University, 404 Comstock Avenue. 1960. 25 pp. Describes activities engaged in by the Center from July 1, 1959 to June 30, 1960. The Center seeks a better understanding of how and when crisis points occur and what may be done to help youngsters pass through these crisis periods. This is one of a series of documents reporting on studies conducted by the Youth Development Center. Established in mid-1958 by the Ford Foundation, the Center conducts research, demonstration, and training programs in the area of adolescent behavior and delinquency.

Belaire Elementary School, San Angelo, Texas. New York 22: Educational Facilities Laboratories, Inc., 477 Madison Avenue. 1960. 19 pp. Describes plans of this elementary school and gives construction cost breakdown. Also available from the same source is a 26-page brochure about the Heathcote Elementary School in Scarsdale, New York.

Careers Ahead in the Chemical Industry. Washington 9, D. C.: Manufacturing Chemists' Association, Inc., 1825 Connecticut Avenue, N. W. 1960. 28 pp. Up to 20 copies free; additional copies 15¢ each. Designed to arouse students' interest in the opportunities available in the chemical industry. It

may also help to explain to counselors and teachers, as well as to students and their parents, what the industry expects of candidates for employment.

The Cultures of the Americas. Washington 25, D. C.: U.S. National Commission for UNESCO, Department of State. 1960. 85 pp. The Report of the Seventh National Conference of the United States National Commission for UNESCO which was held in Denver, Colorado, September 29-October 2, 1959, on the theme "The Cultures of the Americas: Achievements in Education, Science and the Arts."

Dietetics as a Profession. Chicago 11, Ill.: The American Dietetic Association. 1960. 36 pp. 35¢. One copy free to counselors, teachers, principals, and librarians. Compares hours, working conditions, and salaries of dietitians to other professional men and women.

Educational and Cultural Exchange. Washington 25, D. C.: Bureau of Educational and Cultural Affairs, U. S. Department of State. 1960. 49 pp. 55¢. Reviews the 1959 operations of this project, the International Educational Exchange Program.

Guide to Education Aids Available from the Chemical Industry. Washington 9, D. C.: Manufacturing Chemists' Association, Inc., 1825 Connecticut Avenue, N. W. 1960. 16 pp. Single copy free; additional copies 10 cents each. Describes the contents and indicates the sources of more than 150 brochures, folders, bulletins, flow-charts and other literature prepared by the Association's Member Companies and by MCA itself. This publication is a companion piece to MCA's "Film Guide to Chemicals, Chemistry and the Chemical Industry."

A Guide to the Teaching of American History and Government, Terms 1, 2, 3, 4. Philadelphia, Pa.: School District of Philadelphia. 1960. 88 pp. A revision in which special emphasis is placed upon the chronological study of history, with an allotment of more time to the historical treatment. Economics and social problems are studied in their historical setting.

A Guide to the Teaching of the Mechanics of English, Grades 7-12 (Tentative). Philadelphia, Pa.: School District of Philadelphia. 1960. 42 pp. Presents essential concepts in grammar, correct usage, punctuation, and capitalization—developing skills basic to writing and speaking.

High Spots in State School Legislation, January 1-August 1, 1960. Washington 6, D. C.: Research Division, National Education Association, 1201 Sixteenth Street, N.W. 1960. 47 pp. 50¢ 2-9 copies—10% discount; 10 or or more copies—20% discount. This report summarizes for 23 states both the legislative goals of the state education associations and the significant school laws enacted. Included in the compilation is information for all states which held regular sessions. Also reported are the major school bills passed in Delaware's holdover 1959 session. The enactments contained in this report cover the period January 1, 1960, to August 1, 1960, except for Pennsylvania.

How Strong Is Your School? Washington 25, D. C.: Superintendent of Documents. 1960. 13 pp. 10¢. Acquaints the reader with Titles III and V-A of the National Defense Education Act.

HOWSAM, R. B. *New Designs for Research in Teacher Competence.* Burlingame, Calif.: California School Boards Association and the California Teachers Association, 1705 Murchison Drive. 1960. 46 pp. $1. Suggests a variety of research ideas and proposals which could be undertaken for studies of teacher competence.

————. *Who's a Good Teacher?* Burlingame, Calif.: California School Boards Association and the California Teachers Association, 1705 Merchison Drive. 1960. 48 pp. $1. A review of research literature in the field of teacher evaluation and related personnel evaluation.

Judging and Improving the Schools: Current Issues. Burlingame, Calif: California Teachers Association, 1705 Murchison Drive. 1960. 15 pp. A statement, interpretive in nature rather than being a policy document.

Keynote: Understanding. Putney, Vermont: The Experiment in International Living, Inc., United States National Office. 1960. 23 pp. Tells about the program of this organization.

Music Director's Desk Book. Minneapolis 15: Schmitt, Hall, and McCreary Company, Park Avenue at Sixth Street. 1960. 96 pp. A desk calendar book with space for daily entries from September 4, 1960, to September 2, 1961, prepared for music directors. Also contains much useful information about music as well as about publications available from this company.

Official Report 1959-1960. Washington 6, D. C.: NEA Department of Classroom Teachers, 1201 Sixteenth Street, N.W. 1960. 108 pp. The annual report and also includes regional reports and the 44 resolutions adopted at the 1960 convention in Los Angeles.

Public Schools No. 9 Borough of Queens New York City. New York 22: Educational Facilities Laboratories, Inc., 477 Madison Avenue. 1960. 12 pp. Describes the growth in school population and how this elementary school building has been planned to meet conditions in a public housing area.

RASKIN, ABRAHAM, editor. *Star '60.* Washington 6, D. C.: National Science Teachers Association, NEA, 1201 Sixteenth Street, N. W. 1960. 64 pp. $1. Selections from the winning entries in the 1960 Science Teachers Achievement Recognition Program.

Report to the Congress on Juvenile Delinquency. Washington 25, D. C.: Superintendent of Documents. 1960. 54 pp. 35¢. Discusses trends; factors related to delinquency; means of treatment, control, prevention, and research; and presents a summary and recommendations.

ROSBERG, C. G. *Africa and the World Today.* Chicago 3: Foreign Relations Project, Suite 832, First National Bank Building. 1960. 66 pp. 50¢. Discusses geography, history, tradition, goals and struggles, challenges, race and politics, development and democracy, implications for American policy, *etc.* of Africa.

ROSE, MAURI. *Here's Safe Driving.* Detroit: Chevrolet Motor Division, General Motors Corporation. 1959. 32 pp. Free. A motoring guide published in support of the National Safety Council's accident prevention program. Illustrated.

Salary Schedules, Classroom Teachers, Urban Districts 100,000 and Over in Population, 1960-61. Washington 6, D. C.: Research Division, National Education Association, 1201 Sixteenth Street, N. W. 1960. 32 pp. 50¢ per copy; 2-9 copies, 10% discount; 10 or more copies, 20% discount. Although beginning teachers are paid salaries less than beginners in most other professions, the greatest discrepancy between teaching and other professions has been in the amount of progress possible within the profession. Slight upward trends in both minimum and maximum salaries for teachers are shown in this report. In the largest population group (500,000 and over) salaries ranged

from an average beginner's minimum of $4373 for teachers with a B.A. degree to an average maximum for those with Ph.D.'s of $7575. In the 100,000 to 500,000 population group the range was $4200 to $7605.

School and Early Employment Experience of Youth. Washington 25, D.C.: Superintendent of Documents. 1960. 89 pp. 50¢. A study of youth 16-18 years of age who have dropped out of high school and those high-school graduates who do not go on to college. Discusses first jobs, how jobs were obtained, wages, hours, and employment.

STAEHLE, J. F. *Characteristics of Administrative Handbooks for School Staff Personnel.* Washington 25, D. C.: Superintendent of Documents. 1960. 50 pp. 25¢. A report of an analysis of the administrative handbooks by 72 medium- and large-sized school systems.

STEWART, M. S. *That No Man Shall Hunger! Public Affairs Pamphlet No. 304.* New York 16: Public Affairs Committee, Inc., 22 East 38th Street. 1960. 20 pp. 25¢. Stressing the fact that "there is no simple way of overcoming the food shortages that have plagued mankind from its earliest days," the author outlines the various steps that have been undertaken by the FAO and other agencies in a multipronged attack on the problem.

Studies of Educational Problems Involved in School Integration. Washington 6, D. C.: National Education Association, 1201 Sixteenth Street, N. W. 1960. 31 pp. 50¢. Contains summaries of doctoral dissertations, research and professional studies, and descriptive and general reports. Also contains subject and author indices.

Suggestions for Effective Teaching. Teaneck, N. J.: Fairleigh Dickison University. 1960. 7 pp. Suggestions for the beginning teacher.

What Motorists Really Think About Traffic Safety! Washington 6, D. C.: ATA Foundation, Inc., 1424 Sixteenth Street, N. W. 1960. 14 pp. Free. A condensed report of an opinion study of traffic safety--a study sponsored as a public service by the Pure Oil Company and the ATA Foundation. Illustrated.

Two Middle Schools, Saginaw Township, Michigan. New York 22: Educational Facilities Laboratories, Inc., 477 Madison Avenue. 1960. 21 pp. Describes plans of the two schools (grades 5-8; 650 pupils each), and gives construction cost breakdowns.

News Notes

PROFESSIONAL ETHICS OF THE TEACHING PROFESSION

The Committee on Professional Ethics of the National Education Association is making a nationwide study of the ethics of the teaching profession. The purposes of this project are: (1) to center attention on the NEA Code of Ethics and separate codes adopted by state and local associations; (2) to obtain grass-roots opinion relative to a single code of ethics for all members of the teaching profession; and (3) to explore the need for the teaching profession to assume responsibility for disciplining its members.

The present NEA Code of Ethics was adopted in 1952. Since then 24 state associations and many local groups have adopted the NEA Code. All other states have developed separate codes, as have some local organizations. During the past few years there has been increasing discussion by teachers of the need (1) to develop a single code of ethics and (2) to adopt procedures for its enforcement. It is argued that both steps are necessary if full professional status is to be accorded teachers by the public.

At the open meeting of the Committee on Professional Ethics in Los Angeles on June 28, 1960, informal representatives of 39 state associations unanimously recommended the development of a single code of ethics for the teaching profession and plans to implement it. The NEA Ethics Committee needs to have the opinion of thousands of American teachers on this matter.

The Committee is asking every local teacher association to devote a meeting to a discussion of the ethics of the teaching profession or in some way find the opinion of teachers in regard to this subject. The Committee has prepared a series of questions for discussion at meetings; it has also prepared suggested aids and a suggested agenda for those planning the meeting.

ASSESSING THE JUNIOR HIGH SCHOOL

An *Assessment Guide* for use in the junior high-schools has been prepared by Robert J. Lane, principal of the Long Lots Junior High School in Westport, Connecticut, as part of the work which he did in connection with his doctoral program. The members of the Connecticut Junior High-School Committee suggested this project to Dr. Lane and worked with him in its development. Several junior high-school faculty groups reviewed the original guide and made suggestions for revising it. It will be used by the staff of the Bureau of Elementary and Secondary Education of the State Department of Education in the program of evaluation of junior high schools in Connecticut.

This *Guide* has been prepared to aid junior high-school professional staff members in appraising their school. It is designed to include five general aspects of the junior high school and is divided into five parts: (1) *Pupils* (45 check items); (2) *Philosophy* (13 items); (3) *Program* (73 items); (4) *Personnel* (112 items); and (5) *Physical Plant* (46 items). These items are carefully selected. They are considered basic to the study of most junior high-school programs. They are included as stimuli for careful consideration prior to the formulation of sound judgments and decisions by a staff concerning the effectiveness of its own school offerings.

This *Guide* is not designed to evaluate or to rate one junior high school against another junior high school. No percentage or point rating should be sought as the end result. Rather, through its use, it is hoped that each school staff may gain insight and develop understanding of its own students and will then proceed to improve its unique task of educating them as individuals.

NEW EDUCATIONAL FILMS

The C-B Educational Films, Inc. (690 Market Street, San Francisco 4, California) has recently released a series of 16mm films for use at varying grade levels. Following is a listing of these films, each with a short description:

Beginning Spanish, Un Problema De Algebra (Sound). The new C-B Spanish Series follows the functional as opposed to the grammatical approach to teaching foreign languages. Aural-oral experiences are presented in an interesting and captivating manner, by using scenes and experiences familiar to the students. The film series and accompanying sound track tapes are designed to be integrated with existing courses of study in the first two years of beginning Spanish. Idiom and vocabulary are taken from existing ninth- and tenth-grade instructional levels. One film and sound tape is intended for use during each of the four semesters involved.

Keys to Reading (Sound). This set of three films demonstrates difficulties encountered by the reader with respect to unfamiliar words and suggests procedures for developing a rich memory vocabulary.

Pathways to Reading (Sound). This set of five films develops reasons for reading and is constructed for students in fourth to eighth grades.

Phase Reading (Sound). This set of 12 films presents teaching of reading in meaningful groups of words. This not only requires the reader to use a wide eye span, but also—of first importance—it lets him find out what it is to group ideas as well as words into total meaning. Accompanying the *Reading Phase* films are two booklets: one a teacher manual that suggests ways in which the films can be used and sets forth teaching devices and techniques to help students improve their reading.

Beginning Phase Reading (Silent). This series of three films is designed for sixth-grade level and developed for the purpose of providing the student with interesting and provocative materials to challenge him to read better and to show him that he can read better. Reading rate starts at 100 words per minute and progresses to 160 words at silent speed and to 240 words at sound speed.

Intermediate Phase Reading (Silent). This set of six practice films is designed to follow the *Beginning Phase Reading* set or to be used for students not requiring the simpler series. Reading rate starts at 180 words per minute.

Advanced Phase Reading (Silent). This set of six practice films is designed to follow the *Intermediate Phase Reading* set. It allows students to work with reading rates to 536 words per minute.

Speech Preparation (Sound). This film deals with an important and broad subject in the field of speech. Its purpose is to teach the basic steps in speech preparation applying them to important contemporary material so that they will be clear and practical to the student. It can be shown first and textbook materials can be added or it can supplement the textbook.

COMMITTEE SUBMITS A MERIT PAY PLAN

The Utah Merit Study Committee after six years of study and an expenditure of half a million dollars has come up with a Merit Pay Plan which has been recommended to a subcommittee of the Utah State Legislative Council. This is suggested as a state-wide plan. This plan if adopted would be on an optional basis. This is in contrast to Florida's state legislature's plan, inaugurated this year, which requires schools to participate. Likewise, the Utah plan would provide more state supervision than Florida's.

Another approach to this problem is the recent study being planned cooperatively by the American Association of School Administrators, the National School Boards Association, and the Department of Classroom Teachers of the NEA. These three groups and other persons met in Washington, D. C., to plan a research project limited to the definition and identification of teacher competences. It is hoped that this proposed study, expected to extend over two or three years, will receive Foundation aid.

NATIONAL TEACHER EXAMINATIONS

The National Teacher Examinations, prepared and administered annually by Educational Testing Service, will be given at 160 testing centers throughout the United States on Saturday, February 11, 1961. At the one-day testing session, a candidate may take the Common Examinations, which include tests in Professional Information, General Culture, English Expression, and Nonverbal Reasoning; and one or two of thirteen optional examinations designed to demonstrate mastery of subject matter to be taught. The college which a candidate is attending, or the school system in which he is seeking employment, will advise him whether he should take the National Teacher Examinations and which of the Optional Examinations to select.

A Bulletin of Information (in which an application is inserted) describing registration procedures may be obtained from college officials, school superintendents, or directly from the National Teacher Examinations, Educational Testing Service, 20 Nassau Street, Princeton, New Jersey. Completed applications, accompanied by proper examination fees, will be accepted by the ETS office during November and December, and early in January so long as they are received before January 13, 1961.

PREPARATION AND EXPERIENCE FACTORS IN SALARY SCHEDULES

Although beginning Teachers are paid salaries less than beginners in most other professions, the greatest discrepancy between teaching and other professions has been in the amount of progress possible within the profession.

A new trend is in evidence, however, reports Sam M. Lambert, director of the NEA Research Division. In a new NEA Research Division survey, a trend was found toward greater spread between the salaries offered to beginning teachers at the bottom of the scale and the compensation of experienced teachers with superior preparation.

School boards in large cities recently have been giving greater salary increase recognition to teachers with advanced preparation and long experience, Lambert says. Slight, upward trends in both minimum and maximum salaries for teachers are shown in this report. "Perhaps the most significant finding," Lambert writes, "is that maximum salaries paid to teachers of longest experi-

ence and highest professional preparation show a slightly greater percentage of increase than the salaries for beginning teachers."

It has long been urged that the maximum of a salary class should be at least twice the minimum, but teacher salary schedules are still far from that goal. The average maximum salary for teachers with a B.A. degree in the largest school districts, for instance, is only 60.5 per cent above the average minimum.

In the largest population group (500,000 and over) salaries ranged from an average beginner's minimum of $4,373 for teachers with a B.A. degree to an average maximum for those with Ph.D.'s of $7,575. In the 100,000 to 500,000 population group the range was from $4,200 to $7,605.

Copies of *Salary Schedules, Classroom Teachers, Urban Districts, 100,000 and Over in Population, 1960-61*, may be ordered from the National Education Association, 1201 16th St., N. W., Washington 6, D. C. 31 pages. 50¢ each.

FEDERAL TAXES ON BENEFITS FROM YOUR RETIREMENT SYSTEM

The third edition of Federal Taxes on Benefits from your Retirement System by Madaline Kinter Remmlein is now available. A revised edition was necessary because of changes made during the summer of 1960 by Congress and the Internal Revenue Service. These changes are advantageous to retired taxpayers. This new edition explains and exemplifies the new procedure and shows which disabled retirants are entitled to refunds or credits on previous over-payments and how they may obtain such refund or credit. In addition to making the changes necessitated by revised laws and regulations, the new edition reflects editorial changes resulting from a thorough-going check of the previous edition, undertaken for the purpose of clarifying each explanation. The end-product, therefore, is an improvement. Copies of this third edition are available at $1.00 each from the Interstate Printers & Publishers, Inc., Danville, Illinois.

RATIO OF GUIDANCE COUNSELORS TO PUPILS REDUCED

In two years' time the ratio of guidance counselors to pupils has been reduced from one for every 750 pupils to one for 600 pupils under National Defense Education Act funds. This report was made at a meeting of state guidance counselors at Kansas City. Also reported: at least 75 per cent of all high-school students have been tested as to aptitude and ability. More than half of the counselors indicated that they want the NDEA counseling services extended to elementary schools.—*Education U.S.A.*

OCCUPATIONAL OUTLOOK HANDBOOK

The 1959 edition of the *Occupational Outlook Handbook* describes employment prospects in more than 600 occupations and 30 major industries. This comprehensive reference book is widely recognized as an authoritative source of occupational information. Designed for use by vocational counselors and young people planning their careers, this 800-page illustrated volume describes the nature of the work, qualifications required for beginning positions, lines of advancement, location of jobs, and earnings and working conditions in each occupation and industry. Copies of this *Handbook* are available from the Superintendent of Documents, Washington 25, D. C., at $4.25 each. The

HOMOGENEOUS GROUPING FOR OPTIMUM RESULTS

AT DEVEREUX SCHOOLS children of similar maturity, aptitude, and type of problem are homogeneously grouped in separate school-units. There are a total of twenty-two semi-autonomous units in Pennsylvania, California, and Texas. Each unit maintains its own highly individualized curriculum without losing its homelike atmosphere.

Remedial education at Devereux Schools extends from kindergarten through high school. General or college preparatory courses can be pursued, as well as vocational or commercial programs. Available to each student, as needed, are the professional resources of The Devereux Foundation, which employs a multidisciplined approach to his problems. This method combines the principles of psychiatry, psychology, medicine, and education to provide the therapies that will benefit him the most.

CLINICAL STAFF

J. Clifford Scott, M.D.
Edwin H. Abrahamsen, M.D.
Aurelio Buonanno, M.D.
Charles M. Campbell, Jr., M.D.
Fred J. Culeman, M.D.
Ruth E. Duffy, M.D.
William F. Haines, M.D.
Robert L. Hunt, M.D.
Richard H. Lambert, M.D.
Leonardo Magran, M.D.
Joseph J. Peters, M.D.
Jacob S. Sherson, M.D.
Albert S. Terzian, M.D.
Walter M. Uhler, M.D.
Tirso L. Vinueza, M.D.
Lance Wright, M.D.
F. Ellsworth Henry, S.T.D.
William J. Cohen, Ph.D.
Dorothy E. Conrad, Ph.D.
Sidney L. Copel, Ed.D.
Robert G. Ferguson, Ed.D.
Shirley M. Jahnson, Ph.D.
John R. Kleiser, Ph.D.
Murray Levine, Ph.D.
Henry Platt, Ph.D.
Edgar A. Smith, Ed.D.
George Spivack, Ph.D.
Anne Howe, M.S.

Kenneth E. Evans, B.S.

Psychoanalytic Consultants

G. Henry Katz, M.D.
Herbert H. Herskovitz, M.D.

THE DEVEREUX FOUNDATION

A nonprofit organization *Founded 1912*
Devon, Pennsylvania
Santa Barbara, California *Victoria, Texas*

SCHOOLS
COMMUNITIES
CAMPS
TRAINING
RESEARCH

HELENA T. DEVEREUX
Administrative Consultant

EDWARD L. FRENCH, Ph.D.
Director

WILLIAM B. LOEB
Treasurer

Professional inquiries for Eastern Schools should be directed to CHARLES J. FOWLER, *Director of Admissions*, Devereux Schools, Devon, Pa.; for Pacific Coast Schools, to KEITH A. SEATON, *Registrar*, Devereux Schools in California, Santa Barbara, Calif.; Southwestern residents address Devereux Schools of Texas, Box 336, Victoria, Tex.

Handbook reports are also available in a series of 89 separately bound pamphlets on different fields of work which are especially suitable for lending to students and others with particular career interests. In addition, current developments and trends in the job world are reported in the *Occupational Outlook Quarterly*.

SCHOOL DISTRICTS WITHOUT CLASSROOMS

The Census Bureau has found 7,000 school systems in the country operating without any classrooms, existing solely for local tax levying purposes. Further, nearly one third of the nation's school districts provide schools for less than 50 pupils. Only one out of three enrolls 300 or more students. But there has been progress in reorganization—a reduction of 10,000 school districts since 1957.—*Education U.S.A.*

DO TALENTED GRADUATES GO TO COLLEGE?

There is a popular impression that a sizeable percentage of academically superior high-school graduates do not utilize fully their academic potential by further education beyond high school. In order to determine the extent to which this impression corresponds with reality in Michigan, the Evaluation and Examinations Division of the University of Michigan, with the cooperation of the Michigan School Testing Service of the Bureau of School Services, is initiating a follow-up survey of the top ten per cent of all Michigan high school graduates of 1960.

During November, every high-school principal in Michigan received a short questionnaire asking him to provide the names of the top ten per cent of his June 1960 graduates along with information as to their present activity and location. This information will be used to determine the percentage of these top students who are: (1) enrolled in a college, university, or other educational institution; (2) enrolled in some Michigan college, university, or other educational institution; (3) employed; (4) married; (5) in the Armed Services; (6) recipients of college scholarships.

The study is under the direction of John E. Millholland, director of the Evaluation and Examinations Division, and Frank B. Womer, director of the Michigan School Testing Service, 122 Rackham Building, Ann Arbor.—*The Bulletin* of Michigan Association of Secondary-School Principals.

OHIO STARTS SCHOLARSHIP PLAN

Ohio is the latest state to create a scholarship program. Though similar in many respects to the state programs now operating in California, New Jersey, New York, and Rhode Island, this one has a unique way of financing itself. The money for a trust fund will be raised primarily from private and public (non-governmental) sources, with the state matching up to one third of these contributions. The trustees of the fund expect to raise $15,000,000 within the next few years. Income from the fund will provide the scholarships.

According to Robert D. Freeman, the Ohio program's executive secretary, the trustees have been given broader responsibilities than their counterparts in other state programs. Besides the large responsibility falling on them for fund raising, the trustees must establish all criteria for the selection of winners and determine the number of winners in any one-year period. Most of these matters were specified or provided for in the legislation that established other state programs. There are nine trustees, two from higher education and one

Now! A low-cost way to automate class scheduling–

Keysort® Data Processing

Student-oriented, non-conflict class scheduling is only one of the many benefits your school will derive from low-cost Keysort Data Processing.

Many schools have chosen this modern, economical system to provide objective grade reporting, strict attendance control, data on library activities and a variety of other vital school administrative problems. The reasons for selecting Keysort are many: No restrictive procedures, minimum training, remarkable economy, simplicity of installation and operation.

Fits schools of any size

Keysort is the only data processing system flexible enough to fit your school now . . . and as it grows. And at a cost well within your school's budget.

With Keysort you use easy-to-handle punched cards. Code-notched for rapid sorting, they help reduce writing, insure greater accuracy . . . and the results are summarized direct.

Less clerical work for teachers

Keysort gives you the fast, accurate information you need to provide better education. You get the information *when you need it* . . . and reduced office burdens mean you don't have to turn teachers into clerks.

System tailored to your school

Your nearby Royal McBee Data Processing Systems Representative has had a wealth of experience in solving attendance control and other school problems. Working with you and your board, he can offer helpful advice about the low-cost Keysort system tailored to your school's specific requirements. Call him or write us at Port Chester, N. Y.—and we will be happy to supply you with actual case histories from our files.

ROYAL McBEE *corporation*

NEW CONCEPTS IN PRACTICAL OFFICE AUTOMATION

from the secondary schools. The current chairman is Joseph E. Cole, the president of National Key Co., Cleveland, Ohio.

Ohio residents who are high-school students and score high on the Ohio General Scholarship Test will be invited to apply for an Ohio Scholarship. School record, principal's recommendation and family information will be used to determine the winners and establish the amount of the stipends. It is expected that awards, usable only at Ohio colleges and universities, will not exceed $800 per year. Awards may be renewed for one year only, providing the student meets standards for college performance set by the trustees. Inquiries about the plan may be addressed to the Executive Secretary, Ohio Scholarships Fund, 111 Wyandotte Bldg., 21 West Broad Street, Columbus 15, Ohio.—*Financial Aid News.*

THREE SUMMER INSTITUTES IN THE HUMANITIES

The John Hay Fellows Program will sponsor three Summer Institutes in the Humanities in July 1961. The Institutes will be held at Bennington College, Bennington, Vermont; Colorado College, Colorado Springs, Colorado; and Williams College, Williamstown, Massachusetts. Approximately 110 public high-school teachers and 50 public school administrators will participate in these Institutes. In seminars, they will read and discuss several significant books; in small classes, they will study literature, history, and philosophy. There will also be special work in music and art.

The faculties of the Summer Institutes will consist of professors from Bennington, Colorado, Hiram, and Williams Colleges, the Carnegie Institute of Technology, and Columbia, Rutgers, and Wesleyan Universities.

The teachers will be selected from schools and school systems which are not only academically sound, but also interested in making the best possible use of their good teachers and in developing practices designed to break educational lock steps. Applicants should have had at least five years of high-school teaching experience and should be not more than fifty years old. Special invitations will be sent to school administrators.

Each participant will receive $300 for the four-week period, July 1-29, plus $60 for each dependent to a maximum of four, and a travel allowance to a maximum of $100 for each participant. The charge for meals and a room in a dormitory for four weeks will be $160 for each person.

Participants in the Summer Institutes in the Humanities will come from twenty states and the District of Columbia. The states include: Arizona, California, Colorado, Connecticut, Florida, Illinois, Indiana, Louisiana, Maryland, Massachusetts, Michigan, Missouri, New Hampshire, New York, Ohio, Oregon, Pennsylvania, Utah, Virginia, and Wisconsin.

Correspondence should be addressed to Charles R. Keller, Director, John Hay Fellows Program, 9 Rockefeller Plaza, New York City. Applications will close on February 20, 1961.

IMPLEMENTING NEW SCHOOL LIBRARY STANDARDS

Receipt of a $100,000 grant to the American Library Association from the Council on Library Resources, Inc., Washington, D. C., for use in implementing the new *Standards for School Library Programs* locally, regionally, and nationally was announced by David H. Clift, Executive Director of the ALA. *The Standards*, published early in 1960 by the ALA, is the result of six years

another NEW pioneering advance from
MRI-America's Language Laboratory Leader

Simple, easy-to-use
Classroom Equipment
New Methods and Workshops
for more effective teaching

QUICK-CHANGE AUDIO-DRILLS
French, Spanish & German

For easy teacher use
- with any or all textbooks
- with or without lab
- in school and at home

The bridge between grammar and conversation. Not a course, but a valuable supplement to develop students' reflexive use of a language. (1) Student hears problem sentence recorded by native linguist, (2) speaks response, and (3) immediately hears recorded master solution. Time limit and only one possible solution makes student think and speak *in the language*. Each drill comprises 18 LP records, teacher's manual, scripts of all 70 lessons.

More MRI/TRW language laboratories are already in use—more are being installed today—than all others combined. Why?

MRI/TRW's long experience gives schools the broadest selection of simplest, easiest-to-use *equipment*. There's a system to match your exact needs for today and tomorrow, regardless of size, purpose and budget.

MRI/TRW leads in *tested teaching methods*, materials, consultation and regional seminars.

Find out for yourself why MRI/TRW Language Laboratories are preferred so overwhelmingly. Write today for information on MRI/TRW advanced equipment and educational services . . . and details on the new "Quick-Change Audio-Drills."

EDUCATIONAL ELECTRONICS DIVISION

Thompson Ramo Wooldridge Inc.

Englewood Cliffs, N. J. • Lowell 7-5200

divisions and subsidiaries serving the educational field:
Magnetic Recording Industries • Dage Television • Bell Sound • Bel Canto • Intellectronics

World's Most Complete Line of Language Laboratory Equipment

of work by the American Association of School Librarians and representatives from other professional and lay organizations. It replaces a 1945 publication on the subject. The many changes which have occurred in American Education since 1945 have been reflected in the new standards. These are needed today in order to provide goals for forward-looking schools and to add a further impetus in school library improvement both at elementary and secondary levels.

The AASL plans an aggressive program to promote the wide knowledge and understanding of the standards among the school library profession itself and school administrators, chief state school officers, lay groups such as the PTA and school board members, teachers, and curriculum workers, in addition to the library profession as a whole. The new grant will be used to staff the project and provide for necessary materials, evaluation and research, field activities for the headquarters staff, and for setting up conferences and workshops and evaluation projects at the state and local district level.

SUPPLEMENT PUBLISHED TO NDEA PURCHASE GUIDE

An up-dating of the *Purchase Guide* of 1959 in the form of a 64-page *Purchase Guide Supplement* has just been published by the Council of Chief State School Officers. The new section is organized on the same plan as the 344-page *Guide*. The two books are intended to be used together in selecting equipment for instruction in science, mathematics, and modern foreign languages. Approximately 43,000 copies of the *Supplement* will be distributed without cost to state and local school systems throughout the country. An equal number of copies of the *Guide* are already in use in connection with local and state projects under the National Defense Education Act. The *Supplement* and the *Guide* are both published through Ginn and Company of Boston.

UPPER SUSQUEHANNA VALLEY PROGRAM OF COOPERATIVE RESEARCH

Bucknell University's (Lewisburg, Pa.) Upper Susquehanna Valley Program of Cooperative Research has continued its service to area schools and school districts this year. Fourteen new programs have been added to those offered for the first time last year, bringing the number of different projects being presented under the Cooperative Research Program to twenty-one. Among the variety of studies being conducted are in-service programs for teachers, special study programs for gifted students, and consultant programs undertaken with the cooperation of school principals and other school officials interested in the continued development of individual educational systems.

Of the 21 different programs being presented this year, seven are in the area of the sciences, four are in mathematics, two each are in English and French, while the remaining programs carry the general classification of either self-teaching or elementary.

Recognizing the importance of the Cooperative Research Program to those in the Upper Susquehanna Valley area, government agencies have joined with Bucknell, the Ford Foundation and, in several instances, the public school systems themselves to provide financial support for various programs. In addition to the funds provided for the in-service training program under Title III of the Natioal Defense Education Act mentioned earlier, the U. S. Office of Education recently awarded two grants totaling $60,000 for a modern algebra

AVAILABLE TO ALL SECONDARY SCHOOL PRINCIPALS ON REQUEST

Complete, Authoritative Information About —

HOW TO FINANCE A COLLEGE EDUCATION

In April, 1960, Funds for Education, Inc., introduced its plans for education financing to members of the American Personnel and Guidance Association at their Philadelphia convention. Since then, APGA members in 49 States have requested more than 40,000 copies of our booklet, "How to Finance a College Education" and a brochure describing our Investment-in-Education Plans.

Because of the wide interest expressed in our plans and in the literature made available to APGA members, we are offering you this same helpful information. We bring it to your attention because we know that, as Guidance Supervisor or Counselor Educator, you want to be aware of the latest developments in financing educational costs.

There is no charge or obligation for this literature. Upon your request, we will send you the following:

- An authoritative article, written by a recognized educational editor entitled, "How to Finance a College Education." This describes private, state and federal student loan plans.
- A brochure on the Investment in Education Plan of Funds for Education, Inc., the lowest cost national financing plan offered today.

FREE. NO OBLIGATION . . . FOR THIS *VITAL, IMPORTANT* INFORMATION TO GIVE TO STUDENTS AND THEIR PARENTS

TOPICAL LISTING OF INFORMATION IN THIS COMPREHENSIVE LITERATURE

- Present and future college costs, determined by U. S. Office of Education
- Costs at representative colleges across the country
- Percentage breakdown of items in a typical college budget
- Scholarships, federal loans, state loans and college funds available
- Estimated amount of money a student can earn while at college
- How to use credit in financing a college education
- Expense work-chart for estimate of individual costs
- Costs of various private financing plans

. . . Plus other Data you will find invaluable.

PLEASE MAIL THIS COUPON

FUNDS FOR EDUCATION, INC.
319 Lincoln Street, Manchester, New Hampshire

Please send me your article, "How to Finance a College Education" and information on your Investment in Education Plan. I understand there is no obligation, and that I may use this information for reference if and as I see fit.

Name_____ Title _____

School_____

Address_____

City_____ Zone_____ State_____

SSP161

program and a program for the development of spelling materials. Both of these programs are now being carried out under the direction and supervision of Dr. J. William Moore and Dr. Wendell I. Smith, chairman of the Department of Psychology at Bucknell and co-director of the Cooperative Research Program.

AUDIO-DRILLS SPEED LANGUAGE FLUENCY AND ACCURACY

The new MRI/TRW Quick-Change Audio-Drills help students develop their automatic reflexive use of a language in less time. As a supplement for easy use by teachers with any and all textbooks at home and in class, with or without a language lab, the new drills are available in fundamental French, Spanish, and German. A student hears the short, simple problem-sentence recorded by an active speaking linguist. He then speaks his response and immediately hears the master solution. Challenged by a time limit and only one possible solution, he must think and speak in the language, as there is no time for translation. Advantages of the Drills include: self-correction and reinforcement; more practice for every student in less time; and additional practice in aural comprehension, pronunciation, and intonation.

Each Drill, a bridge between grammar and conversation, comprises 18 twelve-inch LP unbreakable records, and a teacher's manual containing instructions, suggestions for use, and scripts of all 70 lessons. Complete details about the new Quick-Change Audio-Drills are available from Educational Electronics Division, Thompson Ramo Wooldridge, Inc., 126 Fifth Avenue, New York 11.

NEW BIOLOGY COURSES

Approximately 14,000 high-school students are now studying the first chapters of new high-school biology courses prepared by the BSCS Summer Writing Conference on the University of Colorado campus during July and August 1960. At the Summer Writing Conference, a staff of 60 teachers and research biologists, assisted by educators, editors, psychologists, and artists produced materials for three separate versions of a high-school biology program, including text, laboratory manuals, teacher's commentaries, and teacher's guides. The new materials are now being used experimentally in 15 BSCS Testing Centers with six to nine teachers in each Center, and in 13 independent test schools. In each Center, one of the teachers serves as Center Leader, and is responsible for general Center management. Each Center also has a college research biologist as consultant, to advise on questions concerning biological content of course materials. The Center Leader and consultant from each of the test Centers, as well as all teachers in the independent test schools, participated in the BSCS Summer Writing Conference.

The texts, laboratory manuals, teacher's commentaries, and teacher's guides for the first third of the BSCS one-year course have been distributed to the participating schools. The remaining materials will be sent to these schools later this year. Some of the test Centers will also use one of the four completed six-week laboratory blocks next spring; the blocks to be used are: Plant Growth and Development; Microbes, Their Growth, Nutrition, and Interaction; Animal Growth and Development; and Interdependence of Structure and Function . . . a Study in Motion.

Reprints from NASSP BULLETIN

1. The Junior High-School Grades in the Six-Year High School
   36 pages — 30 cents
2. The English Language Arts in the Comprehensive High School
   16 pages — 15 cents
3. Modern Foreign Languages in the Comprehensive Secondary School
   16 pages — 15 cents
4. The Place of Science and Mathematics in the Comprehensive Secondary-School Program
   8 pages — 10 cents
5. The Conant Report in Retrospect
   16 pages — 15 cents
6. The Individual and the Mass
   8 pages — 10 cents
7. How Well Does Your School Rate
   40 pages — 35 cents
8. Schools Face the Delinquency Problem
   48 pages — 30 cents
9. Interscholastic Athletics in Junior High Schools
   52 pages — 75 cents

Quantity discounts on any of the above individual titles

2-9 copies, 10%; 10 or more, 20%

Order from
THE NATIONAL ASSOCIATION OF SECONDARY-SCHOOL PRINCIPALS
1201 16th Street, N.W.
Washington 6, D. C.

Beautiful Color—set to music

Choral Robes of WONDERLOOM by MOORE

At all occasions, your School Choir, enrobed in colorful fabrics by MOORE, adds an impressive note of beauty.

New MOORE fabrics, now available, woven from color-locked Chromspun yarn for life-of-the-fabric, guaranteed color-fastness to light, air impurities, perspiration, cleaning, moths and mildew. Wonderfully lightweight. Easy to match as your choral group grows.

Write for Fabric Selector SR57

E. R. MOORE CO.

932 Dakin St., Chicago 13, Illinois
268 Norman Ave., Brooklyn 22, N. Y.
1641 N. Allesandro St., Los Angeles 26, Calif.
1605 Baylston Ave., Seattle 22, Wash.

THE RIGHT COLLEGE FOR THE HIGH-SCHOOL GRADUATE

The creation of a new national program to help students select colleges that are compatible with their individual needs "seems inevitable," Dr. Carroll V. Newsom, president of New York University, has stated in his 1959-60 report to NYU's Board of Trustees.

"Assuming that there will be minimum change in institutional policies, it becomes increasingly clear that we must develop a better system of assistance to students when they are selecting a college," Dr. Newsom said. "This could take the form of an educational superstructure that would provide such guidance, one placed over the present pattern of colleges and universities."

President Newsom also called for intelligent participation by parents in their children's choice of colleges. "Parents and educators need to reach a common ground of understanding," he said. "Both groups have educational obligations that must be recognized if we are to give proper attention to the real needs of college students."

Pointing out that information provided by tests, although useful in studying large groups, often means little in the measurement of an individual, President Newsom said that parents and educators should remind themselves that each student at each period of his career is a unique person with his own mental profile. "Proper parent understanding of the minds of their children is worth much more than test scores," he added.

"The search for the right institution is not to be taken lightly," he said. "Students and their parents too often employ superficial hit-or-miss criteria with unfortunate results. A wise selection is well worth the time and money spent."

President Newsom added that colleges and universities, as "an essential first step" in serving the varying needs of students, must be more explicit in telling the public of their particular competences, their specific interests and purposes, and their special kinds of educational services.

TEENS OPPOSE LOWERING THE VOTING AGE

In a startling shift of sentiment, America's teenagers have turned thumbs down on proposals to lower the voting age to 18. Fully 62.1 per cent of more than 11,000 students voted against lowering the voting age, in the most recent poll conducted by the Institute of Student Opinion. Only 33.5 per cent favored lowering the voting age to 18, while 4.4 per cent were undecided.

Six years ago, the results were practically the reverse. The 1954, ISO poll on the same subject listed 64.9 per cent of teenagers in favor of lowering the voting age to 18. Even in 1956 some 57.6 per cent of teenagers backed the 18-year-old vote.

Nearly six out of ten teenagers back basic changes in the Electoral College system of electing the President of the United States. One in three young people backs election of the President by popular vote. One in four thinks Presidential candidates should be given a percentage of the electoral vote in proportion to the popular vote they win in each state. More than 29 per cent think the Electoral College system should remain the same.

The National Honor Society

A good Student Council project to establish a chapter. For information write to the

NATIONAL ASSOCIATION OF STUDENT COUNCILS

1201 Sixteenth Street, N.W.
Washington 6, D. C.

The 1957 Commencement Manual

$1.50 per copy

☆

National Association of Secondary-School Principals
1201 Sixteenth Street, N.W. Washington 6, D. C.

A SPEECH DEPARTMENT FOR YOUR LIBRARY

The speeches of the leading moulders of public opinion are most important today. Problems affecting national and international affairs are being discussed "pro" and "con". Are the thoughts of these men and women available in your school library for reading and study by your students.

VITAL SPEECHES
will put them there

Indexed in the "Reader's Guide"
Since 1935
Issued 1st and 15th each month

One year $7.00 Two years $13.00
9 months $5.50
Sample copy on request

VITAL SPEECHES
33 West 42nd Street New York 36

FOR PEACE OF MIND DURING STUDENT AND FACULTY TRIPS . . .

NSTIS is privileged to be the nation's leading specialist in the field of educational group travel insurance—serving secondary schools in 42 states and the District of Columbia during all types of trips to places throughout the world.

Details inside front cover of this BULLETIN

For additional information, please complete blanks below and mail to:

NATIONAL STUDENT TOUR INSURANCE SERVICE
416 TOWER BUILDING • WASHINGTON 5, D. C.

NAME _____ TITLE _____

NAME OF SCHOOL (or group) _____

ADDRESS _____ STATE _____

☐ Please check if planning a trip to Washington, D. C.

MAJOR PORTION OF COLLEGE EXPENSES BORNE BY PARENTS

Parents still pay the major share of college expenses for their children, a nation-wide University of Michigan study shows. Conducted by the U-M Survey Research Center (SRC) for the U. S. Office of Education, the study is the first to examine the impact of college costs on a family-by-family basis.

Titled "How People Pay for College," the report is based on more than 2,700 interviews by the SRC. Its authors are John B. Lansing, Thomas Lorimer, and Chikashi Miriguchi of the Center (SRC, 160 pp. $3, cloth).

The study estimates the average annual expense of unmarried students in 1959-60 was about $1,550. (In 1952-53, the Department of Health, Education and Welfare estimated the average annual costs of undergraduate students of $1,385).

Total college expense varies widely by type of enrollment (full or part-time), place of residence (at home or college), and by type of education institution. For three out of four single students interviewed, however, the total annual cost ranges between $950 and $2,450.

NOTHING NEW UNDER THE SUN

If you thought the "teaching machine" was a brand-new invention of the automation age, you're wrong. Teaching machines made their appearance more than 30 years ago, but nobody paid much attention until relatively recently.

A psychology professor at Ohio State University, S. L. Pressey, is generally considered the "father" of teaching machines. In the early 1920s, he developed an apparatus about the size of a portable typewriter which presented to the user a series of multiple choice questions. There were four keys, and in selecting which key to press, the student indicated the answer he thought was correct. In pressing the key, the student also turned up the next question (assuming he had given the right answer) and there was an automatic counter to keep track of the right answers.

Today more than a dozen companies are manufacturing teaching machines. This information is contained in a new 736-page comprehensive reference source book, *Teaching Machines and Programmed Learning*, published recently by the Department of Audio-Visual Instruction of the National Education Association.

A CONFERENCE FOR COUNSELORS

Nineteen high-school counselors from nine states attended General Motors Educational Relations Section's eighth annual conference for junior and senior high-school counselors last October. The purpose of the conference was to acquaint educators with GM personnel policies and programs relating to employment of both high-school and college graduates. The counselors visited GM Technical Center, GM Institute at Flint, and one of Fisher Body Division's plant facilities. They discussed with GM staff and divisional executives the corporation's personnel, college recruiting, industrial relations, job classification, and apprentice training programs.

Membership Secretaries of State High-School Principals Organizations

Affiliated with the National Association of Secondary-School Principals

Alabama Association of Secondary-School Principals (*White*)—*J. C. Blair*, Treasurer, Alabama Association of Secondary-School Principals, State Department of Education, Montgomery 4, Alabama.

Alabama Association of High-School Principals (*Colored*)—*B. A. Outland*, Principal, Box 392, Randolph County Training School, Roanoke, Alabama.

Arizona Association of Secondary-School Principals—*Andy Tolson*, Principal, High School, 400 N. Second Avenue, Tucson, Arizona.

Arkansas School Administrators Association (*Colored*)—*E. H. Hunter*, Principal, Scipio A. Jones High School, Cedar at 10th Street, North Little Rock, Arkansas.

Arkansas Association of Secondary-School Principals (*White*)—*Frank L. Williams*, Principal, Junior High School, Hot Springs, Arkansas.

California Association of Secondary-School Administrators—*William N. McGowan*, 1705 Murchison Drive, Burlingame, California.

Colorado Association of Secondary-School Administrators—*Robert L. Robinson*, Principal, Brighton High School, Brighton, Colorado.

Connecticut Association of Secondary Schools—*Daniel B. Fitts*, Principal, Andrew Warde High School, Fairfield, Connecticut.

Delaware Association of School Administrators—*Hugh B. Perdue*, Principal, Oak Grove Junior High School, Spruce Avenue. Elsmere, Wilmington 5, Delaware.

District of Columbia Association of Secondary-School Principals—*Boise L. Bristor*, Board of Education, Ross Administration Annex No. 1, Washington 9, D. C.

Department of Secondary-School Principals, Florida State Teachers Association (*Colored*)—*Gilbert L. Porter*, P. O. Box 1331, Tallahassee, Florida.

Florida Association of Secondary-School Principals—*E. B. Henderson*, Secretary-Treasurer, Florida Education Association, 208 West Pensacola Street, Tallahassee, Florida.

Georgia Council of Secondary-School Principals (*Colored*)—*Bettye Smith*, Principal, Stephens High School, Calhoun, Georgia.

Georgia High-School Principals Association (*White*)—*W. H. Adams*, Principal, High School, Harlem, Georgia.

Hawaii Association of Secondary-School Principals—*Herman Larsgaard*, Principal, Waialua High & Inter. School, 67-160 Farrington Highway, Waialua, Oahu, Hawaii.

Idaho Association of Secondary-School Principals—*Ellwood Gledhill*, Principal, High School Buhl, Idaho.

Illinois Secondary-School Principals Association—*H. A. Dollahan*, Principal, Lawrenceville Township High School, Lawrenceville, Illinois.

Illinois Junior High-School Principals' Association—*Donald G. Gill*, Assistant Director, Laboratory School, Eastern Illinois University, Charleston, Illinois.

Indiana Association of Secondary-School Principals—*O. L. Van Horn*, 1083 Churchman Avenue, Beech Grove, Indiana.

Iowa Association of Secondary-School Principals—*Delmer H. Battrick*, Principal, Roosevelt High School, 45th and Center Streets, Des Moines 12, Iowa.

Kansas Association of Secondary Schools and Principals—*Erle Volkland*, Principal, High School, Abilene, Kansas.

Kentucky Association of Secondary-School Principals—*James M. Deacon*, Principal, Lexington Junior High School, 4th and Limestone Streets, Lexington, Kentucky.

Louisiana Principals Association (*White*)—*Ben. F. Laborde*, Principal, High School, Marksville, Louisiana.

Louisiana Association of High-School Principals (*Colored*)—*E. C. Land*, Principal, Lowery High School, Donaldsonville, Louisiana.

Maine State Principals Association—*Philip A. Annas*, Department of Education, State House, Augusta, Maine.

Maryland Secondary-School Principals Association—*Stephen A. Lerda*, Principal, High School, Westminster, Maryland.

Massachusetts Secondary-School Principals Association—*Frederick H. Pierce*, Executive Secretary, 3 Broadway, Beverly, Massachusetts.

Massachusetts Junior High-School Principals Association—*Harry Finkelstein*, Principal, Garfield Junior High School, Revere 51, Massachusetts.

Michigan Secondary-School Association—*Roland Lehker*, Executive Secretary, 3501 Administration Building, University of Michigan, Ann Arbor, Michigan.

Minnesota Association of Secondary-School Principals—*William F. Carlson*, Junior-Senior High School, Northfield, Minnesota.

Mississippi Association of Secondary-School Principals—*Harrison Ellzey*, Principal, High School, Box 466, Collins, Mississippi.

Missouri Association of Secondary-School Principals—*Leroy C. Amen*, Principal, Lindbergh High School, 4900 S. Lindbergh Boulevard, St. Louis 26, Missouri.

Montana Association of School Administrators—*Owen Loftsgaarden*, Supt. of Schools, Power, Montana.

Nebraska Association of School Administrators—*Merle A. Stoneman*, Administration Building 404, University of Nebraska, Lincoln 8, Nebraska.

Nevada Association of Secondary-School Principals—*William J. Wright*, Principal, Churchill County High School, Fallon, Nevada.

New Hampshire Secondary-School Principals Association—*Irvin H. Gordon*, Principal, High School, Marlboro, New Hampshire.

New Jersey Secondary-School Principals Association—*Charles W. Mintzer*, Principal, High School, Fair Lawn, New Jersey.

New Mexico Secondary-School Principals Association—*Jess J. Andersen*, Principal, Alameda Junior High School, 808 N. Alameda, Las Cruces, New Mexico.

European Branch of the NASSP—*Kenneth A. Erickson*, Sec. Schools Coord., Headquarters DEG, APO 164, New York, N. Y.

New York City High-School Principals Association (*Senior*)—*Vincent McGarrett*, Principal, Francis Lewis High School, 58-20 Utopia Parkway, Flushing 65, New York.

New York State Association of Secondary-School Principals—*T. Walsh McQuillan*, 152 Washington Avenue, Albany 10, New York.

New York City Junior High-School Principals Association—*Maurice Mehlman*, Principal, Andries Hudde Junior High School 240, Nostrand Avenue & Avenue K, Brooklyn 10, New York.

New York City Vocational High-School Principals Association—*Jacob H. Raphael*, Principal, Thomas A. Edison Vocational High School, 165-65 84th Avenue, Jamaica 33, New York.

North Carolina Division of Principals of the NCEA—*E. F. Johnson*, Principal, High School, Ayden, North Carolina.

Department of Secondary-School Principals of NCTA (*Colored*)—*M. L. DeVane*, Principal, Freedman High School, Lenoir, North Carolina.

North Dakota Principals Association—*Otto L. Bernhoft*, Assistant Principal, Fargo High School, 506-23rd Avenue, North, Fargo, North Dakota.

Ohio High-School Principals Association—*Charles L. Fox*, Principal, Springfield South High School, 700 S. Limestone Street, Springfield, Ohio.

Oklahoma Secondary-School Principals Association—*J. Frank Malone*, Principal, Northwest Classen High School, 2801 N.W. 27th & May Sts., Oklahoma City 27, Oklahoma.

Oregon Association of Secondary-School Principals—*W. Don Barnes*, 106 State Library Bldg., Salem, Oregon.

Pennsylvania Association of Secondary-School Principals—*S. P. Bomgardner*, Principal, New Cumberland Junior High School, New Cumberland, Pennsylvania.

Rhode Island Secondary-School Principals Association—*George M. Mullervy*, Principal, Riverside Junior High School, Riverside, Rhode Island.

South Carolina Association of Secondary-School Principals (*White*)—*E. M. Culpepper*, S. C. Assn.-Sch. Administrators, 1510 Gervais Street, Columbia, South Carolina.

South Carolina High-School Principals Association (*Colored*)—*C. C. Woodson*, Principal, Carver High School, Spartanburg, South Carolina.

South Dakota Association of Secondary-School Principals—*George W. Janke*, Principal, Senior High School, 410 East 5th Avenue, Mitchell, South Dakota.

Tennessee Association of Secondary-School Principals—*Howard G. Kirksey*, Dean of Instruction, Middle Tennessee State College, Murfreesboro, Tennessee.

Texas Association of Secondary-School Principals (*White*)—*Mr. Pat Woosley*, Principal, Highland Park Junior High School, 3520 Normandy, Dallas 5, Texas.

Texas Principals Association (*Colored*)—*Garfield Hill*, Principal, Weldon High School, Gladewater, Texas.

Utah Secondary-School Principals Association—*Lerue Winget*, Director of Secondary Education, 223 State Capitol, Salt Lake City, Utah.

Vermont Headmasters Association—*Robert F. Pierce*, Principal, High School, Northfield, Vermont.

Virginia Department of Secondary-School Principals (*White*)—*Clarence H. Spain*, Principal, Binford Junior High School, 1701 Floyd Avenue, Richmond 20, Virginia.

Virginia Teachers Association (*Colored*)—*J. F. Banks*, Principal, Christiansburg Institute, Cambria, Virginia.

Washington Association of Secondary-School Principals—*George Hermes*, Principal, Irene S. Reed High School, 7th and Alder, Shelton, Washington.

Washington Junior High-School Principals' Association—*C. E. Halverson*, Principal, Libby Junior High School, East 2900 First Avenue, Spokane 31, Washington.

West Virginia Secondary-School Principals' Commission—*John F. Santrock*, Principal, Nitro High School, Nitro, West Virginia.

Wisconsin Association of Secondary-School Principals—*Harold L. Paukert*, Supervising Principal, Kohler Public Schools, 230 School Street, Kohler, Wisconsin.

Wyoming Association of Secondary-School Principals—*Merritt B. Jensen*, Principal, High School, Cheyenne, Wyoming.

Announcing NEW texts for 1961...

EFFECTIVE ENGLISH

By Richard A. Meade, Oscar M. Haugh, and Dorothy E. Sonke. This four-book English series for secondary-school pupils is built upon the interrelation of all language arts: writing, speaking, listening, and reading. Each book is divided into two parts, with the use of language presented in Part One and the structure of language developed in Part Two. Activities, exercises, and enrichment materials are designed to meet all levels of interest and ability. A Teachers' Manual and a Workbook are available for each text.

THE CAVALCADE SERIES

By Gunnar Horn. Carefully chosen selections from our literary heritage are included in this three-volume anthology series: A CAVALCADE OF WORLD WRITING, A CAVALCADE OF AMERICAN WRITING, and A CAVALCADE OF BRITISH WRITING. Each unit of the books consists of a different literary form. Selections are preceded by an author's biography and are followed by discussion questions.

NEWS IN PRINT

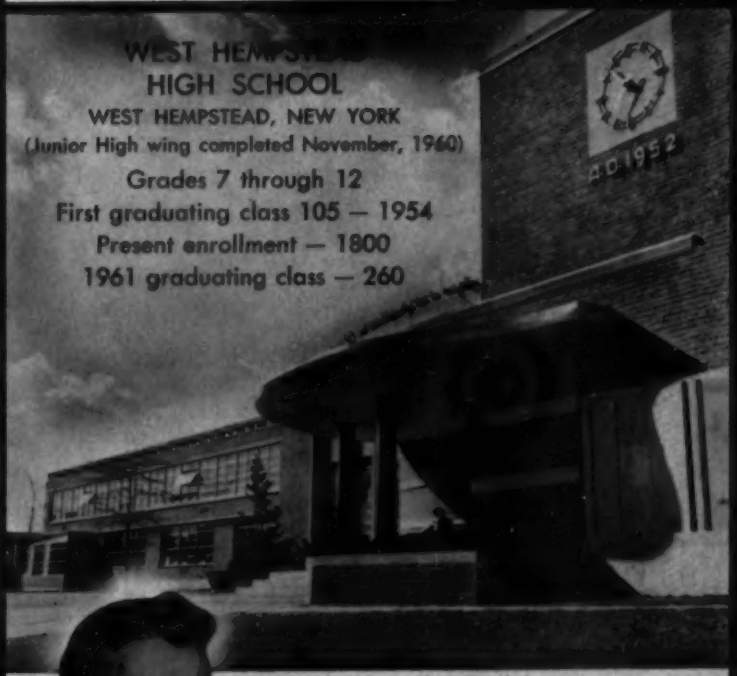
By Homer A. Post and Harold Snodgrass. This text provides students with an introductory course in journalism and serves as a guide for the production of the school paper.

ALLYN and BACON, Inc.

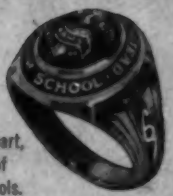
Boston • Englewood Cliffs, N. J. • Chicago
Atlanta • Dallas • San Francisco

EDUCATIONAL PACE-MAKERS

One of a series, selected at random from the distinguished list of fine secondary schools that are creating new standards in education and administration.



M. KIMBALL GARRISON
Supervising Principal
of Secondary Education



The West Hempstead High School Class Ring. Smart, distinguished rendering of significant traditional symbols.

JEWELRY'S FINEST CRAFTSMEN

L. G. Balfour Company

ATTLEBORO MASSACHUSETTS